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The Role of Feedback in Creativity, Innovation, and Entrepreneurship

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Michiel Crommelinck, September 2013, Ghent

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CHAPTER 1

INTRODUCTION

Parts of this chapter are based on: Crommelinck, M. & Anseel, F. (2013). Understanding an encouraging feedback-seeking behaviour: a literature review. *Medical Education*, *47*, 232-241.

INTRODUCTION

When innovation and entrepreneurship are metaphorically regarded as the engine of an economy, creativity can be viewed as the fuel needed to start the engine and to keep it running. Because creative ideas are often the precursor to innovation and entrepreneurship, the study of creativity forms the basis of this dissertation. In this dissertation, I argue that feedback is an important contextual factor that not only can affect how creative ideas evolve, but also how ideas are turned into successful innovations and ventures. Thus, I focus on the role that feedback plays in creativity, innovation, and entrepreneurship.

To further introduce the topics and empirical chapters of my dissertation, I will first present three examples from my personal experience. In providing these examples, I temporarily leave the academic discourse to develop a more personal account of the importance of feedback. I acknowledge that this personal approach is somewhat unusual for an introduction of a dissertation. However, academics have recently argued that creative writing, storytelling, and incorporating a human face can improve academic writing (Dane, 2011; Pollock & Bono, 2013). To me, generating and developing ideas are inextricably linked to seeking feedback. Whenever I achieved creative, innovative, or entrepreneurial success during the past years, I feel that feedback was one of the main contributors to that success. Hence, I choose to begin this dissertation with three personal examples that illustrate the many ways in which feedback can impact creative, innovative, and entrepreneurial activities. In the second part, I will present a brief history of the literature on feedback and feedback-seeking behavior. This literature review is largely based on Crommelinck and Anseel (2013). In the third part, I will summarize the creativity literature and the main theories that have informed this literature. In addition, I will discuss the role that creativity plays in innovation and entrepreneurship, and delineate the differences between these concepts. I will end this introduction with an overview of the chapters in this dissertation.

Example 1: Feedback-Seeking Behavior and Entrepreneurship

Before I even thought about doing a Ph.D., I was doing an internship at a small HR consultancy firm that consisted of three experienced consultants. As this firm provided consultancy to multiple organizations, something began to dawn on me: most of these organizations experienced problems finding recruiters. That moment, an idea popped to mind. What about organizing a job fair called 'Recruit your recruiter'? Knowing that this idea was far from complete, I started looking for feedback from different people. One feedback source, a business school professor, had a strong impact on how the job fair is organized and marketed today. The professor's feedback convinced me early on that, in order to make the job fair appealing to companies, at least 150 candidates should be present at the job fair. This feedback had quite some implications: there were less than 150 students graduating in I/O Psychology, so I needed to expand the scope of the job fair and reach out to other students as well. This feedback also provided me with a clear goal: if the job fair attracted 150 students for the first edition, I would consider it a success. This concrete goal further fueled my motivation to make this idea happen, and it influenced my future decisions regarding the job fair.

As the first example shows, seeking feedback can be highly valuable in entrepreneurial activities. The role of feedback-seeking behavior in entrepreneurship is the focus of the first empirical chapter (Chapter 2).

Example 2: Diverse Feedback Seeking and Creativity

When one seeks feedback from many different people, soon a potential obstacle arises: different people often have different perspectives on an idea. I experienced this issue quite vividly when I was in the process of creating a popular science blog for research on psychology. I needed to find a good name for the blog, and there were two main candidates: 'Psykicks' and 'Mensenkennis'. When I sought feedback about these names, I first sent out emails to many people in my network. In these emails, I explained the goals of the blog and asked the feedback sources which name they preferred. Although opinions were mixed, Psykicks clearly had the edge over Mensenkennis. I also presented the two names to the board of the alumni association of psychologists.

Again, the majority of the board members preferred Psykicks. The board explained that, to them, Psykicks sounded cooler while Mensenkennis sounded older and less exciting. Perhaps some people would have stopped there and would have chosen Psykicks because it was the more popular option. But the arguments put forward by my feedback sources did not convince me yet, and I was really motivated to find the best name for the blog. Hence, I took more time and started to scrutinize the names again. Eventually, I decided to go for Mensenkennis. Although this name sounded perhaps less cool, I decided that coolness is not such an important criterion. Instead, the fact that Mensenkennis clearly referred to the term psychology in the minds of the wider audience and – most importantly – that it was so easy to remember, predominated the decision. Looking back at this decision six months after the launch of the blog, I personally feel I have made the right decision. For example, just think about the potential frustration of having to spell p-s-y-k-i-c-k-s to everyone who hears about the blog for the first time.

The second feedback example highlights aspects of the creative process that are totally different from the first example. From this example, it becomes clear that the feedback obtained from multiple sources can be quite inconsistent, and that the right motivation and context are needed in order to benefit from diverse feedback. These topics are the focus of Chapter 3.

Example 3: Feedback Environment and Self-Supervisor Agreement

For most doctoral students, including myself, the Ph.D. process is characterized by high levels of autonomy and by long-term goals. These characteristics, coupled with the delayed feedback about your decisions and actions, make it easy to wander into the dark. On the one hand, you may easily think you are doing great and making progress, while actually you are not. On the other hand, the research process is also characterized by novelty and uncertainty, and the uncertainty of the research process often made me doubt my decisions and even myself. But the truth lies in the middle, they say. I experienced this first-hand through the feedback I received from my two advisors. When I thought I was doing great, they pointed me towards areas of improvement. When I thought at times that I was simply not a good researcher,

my advisors provided supportive feedback that renewed my motivation and kept me going. In such a way, they created the right feedback environment to obtain a more balanced assessment of my performance as a Ph.D. student. Their feedback kept me on track and I see it as a crucial factor for completing this Ph.D. dissertation.

This final example introduces Chapter 4. There, it will be discussed how the feedback environment and the team climate for innovation can aid employees in forming self-assessments of innovative performance and, more specifically, in improving self-supervisor agreement of innovative performance.

FEEDBACK AND FEEDBACK-SEEKING BEHAVIOR

Researchers have been interested in the effects of feedback on individuals' behavior and performance for over 100 years. One of the first theoretical attempts to describe the effect of feedback on individuals' behavior is Thorndike's (1913, 1927) 'law of effect'. In a behavioristic tradition, Thorndike equated positive feedback with reinforcement and negative feedback with punishment. As such, the law of effect stated that by reinforcing correct behavior and punishing incorrect behavior, individuals' learning and performance should be improved. The law of effect spurred the interest of many researchers over the years to come. The wonder years of feedback research in the first half of the 20th century were summarized by Ammons (1956) in a review of the effectiveness of feedback interventions. Such feedback interventions are generally understood as the "actions taken by (an) external agent(s) to provide information regarding some aspect(s) of one's task performance" (Kluger & DeNisi, 1996, p. 255). Ammons' review concluded that knowledge of results increased learning as well as motivation. Feedback interventions thus received an aura of "almost universally" positive effects (Ammons, 1956, p. 283). Not surprisingly, providing people with feedback about their behavior and performance was increasingly viewed as one of the most accepted and applied psychological interventions.

In the '80s, however, researchers gradually began to recognize that feedback interventions did not lead to universally positive effects. Instead, several studies suggested that the relationship between feedback and

performance was more complicated than previously assumed (e.g., Ilgen, Fisher, & Taylor, 1979; Salmoni, Schmidt, & Walter, 1984). For example, Ilgen, Fisher, and Taylor (1979) were among the first to note that relating feedback directly to behavior was very confusing and that results were often contradictory and seldom straightforward. The critique raised by Ilgen and colleagues in the '80s was eventually pinpointed in the '90s. Forty years after Ammons' review, Kluger and DeNisi (1996) criticized Ammons' review on several grounds. First, the methodological approach of some of the studies incorporated in Ammons' review was questionable. Second, Ammons had ignored the contradictory results of several feedback studies, which would have nuanced his overly positive conclusions. Through a systematic quantitative analysis of 607 effect sizes (i.e., relationships evaluated), Kluger and DeNisi aimed to illuminate the feedback-performance relationship. The results of their meta-analysis were a severe blow for researchers in the feedback domain: although feedback interventions improved performance on average (Cohen's d = .41), one third of feedback interventions actually decreased performance.

When a research domain is characterized by conflicting findings, opportunities tend to arise for new and innovative perspectives. In 1983, Susan Ashford saw such an opportunity, as she introduced the concept of feedback-seeking behavior to the feedback domain. Ashford and her colleagues depicted organizations as feedback-rich environments wherein employees were not condemned to wait passively for feedback, but instead acted as proactive monitors and seekers of feedback (Ashford & Cummings, 1983). Ashford and colleagues thus no longer viewed the feedback recipient as a passive information-processor, but as an active information-seeker. As such, this more proactive view on feedback differed radically from previous feedback conceptualizations. The particular promise of proactive feedback seeking lied in shedding new light on the troubling feedback-performance relationship. It was assumed that people would be more willing to act on feedback they had sought themselves. In turn, self-sought feedback would be more likely to lead to performance improvements than feedback that was not proactively asked for by employees.

The concept of feedback-seeking behavior has spurred research for over 30 years. During these years, researchers have uncovered several antecedents and consequences of feedback-seeking behavior. In the next sections, we will first illustrate some of the individual and contextual antecedents of feedback-seeking behavior and then discuss the consequences of feedback-seeking behavior. First, an example of an individual antecedent of feedback-seeking behavior is learning goal orientation. Learning goal orientation refers to an individual's desire to develop the self by acquiring new skills, mastering new situations and improving one's competence (VandeWalle & Cummings, 1997). Learning goal-oriented individuals attribute a higher instrumental value to feedback as a means for improvement (Park, Schmidt, Scheu, & DeShon, 2007), because they see ability as something that can be improved over time (i.e., it is not fixed). Individuals with a learning goal orientation also assign lower costs to feedback inquiry than do individuals with performance-based goals, because learning goal-oriented individuals conceive negative feedback as an invitation to increase effort and not as a threat to their image or ego (VandeWalle & Cummings, 1997). As such, a learning goal orientation tends to lead individuals to seek feedback more frequently (VandeWalle & Cummings, 1997) and to have a preference for more diagnostic feedback (Park et al., 2007). Second, an example of a contextual antecedent of feedback-seeking behavior is the context in which feedback is sought. Ashford and Northcraft (1992) found that individuals are less likely to seek feedback when they are observed by others than when they are in a private setting. An evaluative audience tends to make individuals nervous about seeking feedback because it highlights potential face loss costs.

The key premise of the literature on feedback-seeking behavior is that feedback seeking benefits individuals. In this paragraph, we review the evidence on three categories of outcomes: adaptation, learning, and performance. First, feedback-seeking behavior has been regarded as a useful resource for individual adaptation (Ashford, 1986). Studies have shown that newcomers in organizations who frequently seek feedback integrate better in their new social environment (Morrison, 1993a). Also, individuals who seek feedback in their first months in a new organization tend to have a more accurate and clearer view

on their role in the organization (Brown, Ganesan, & Challagalla, 2001; Morrison, 1993a). Finally, feedback-seeking behavior has been linked to higher job satisfaction, lower intentions to leave the organization, and lower actual turnover (Morrison, 1993b; Wanberg & Kammeyer-Mueller, 2000). Second, feedback is an important determinant of learning (Rogers, 1969). Indeed, through feedback seeking, individuals can discover opportunities for skill improvement and obtain information about the dominant behavioral norms in a team or organization. Despite feedback-seeking behavior's potential value for individual learning, few studies have looked directly into the relationship between feedback-seeking behavior and actual learning. In a notable exception, Yanagizawa (2008) found that individuals who more frequently sought feedback demonstrated higher goal attainment and learning compared to individuals who sought feedback less frequently. In contrast, Hwang and Francesco (2010) found no relationship between face-to-face feedback seeking and learning. Third and finally, several studies have documented that feedback-seeking behavior can have positive effects on job performance. Renn and Fedor (2001), for example, found that sales employees who sought feedback more frequently realized higher sales' revenues (i.e., average sales per hour) and obtained higher ratings for the quality of their work (i.e., service quality). Studies have also investigated the topic on which feedback is sought. Both for managers and subordinates, negative feedback-seeking behavior tends to be associated with higher performance ratings (Ashford & Tsui, 1991; Chen, Lam, & Zhong, 2007).

Has feedback-seeking behavior thus delivered on its original promise of clarifying the feedback-performance relationship? Unfortunately, the answer to this question differs from the one that was anticipated and hoped for. Specifically, some studies have reported positive effects of feedback seeking on performance (Ashford & Northcraft, 1992; Ashford & Tsui, 1991; Morrison & Weldon, 1990), some studies have failed to find support for a positive relationship (Ang, Cummings, Straub, & Early, 1993; Ashford & Black, 1996; Klich & Feldman, 1992), and other studies even reported a negative relationship between feedback-seeking behavior and performance (Brown et al., 2001; Fedor, Rensvold, & Adams, 1992). A recent meta-analysis of the literature on

feedback-seeking behavior (Anseel, Lievens, Beattey, Shen, & Sackett, 2013) showed that the relationship between feedback-seeking behavior and performance was positive, but weak (ρ = .07). Moreover, the credibility interval for the feedback seeking-performance relationship included zero, which indicates that moderators may be influencing this relationship (Whitener, 1990). Hence, the lack of a strong and consistent relationship between feedback seeking and performance has emerged as one of the striking findings of the current state of the literature on feedback-seeking behavior.

In sum, although feedback is easily assumed by academic and practitioner audiences to be a powerful and positive intervention that enhances learning, motivation, and performance, meta-analytic evidence refutes this assumption. Feedback and feedback-seeking behavior will only improve performance under certain conditions. Although I acknowledge Thorndike's pioneering work on feedback, it currently seems that no 'law' or easily applicable principle of feedback can be distilled. Instead, feedback seems to be a complex phenomenon requiring complex perspectives. The search for innovative and more complex perspectives on feedback and feedback-seeking behavior forms the basis of this dissertation.

CREATIVITY, INNOVATION, AND ENTREPRENEURSHIP

Creativity

In general, creativity is essential for the economic growth and social progress of a society (Florida, 2004; Schumpeter, 1939). While creativity can be found in many forms, such as artistic or scientific creativity, in this dissertation I focus on organizational creativity as a research topic. What distinguishes organizational creativity from other forms of creativity is organizational creativity's exclusive focus on creativity in a work and organizational context. This focus on organizational creativity is warranted, because creativity is increasingly seen as a key driver of the performance, growth, and competitiveness of organizations (Amabile, 1996; Gong, Zhou, & Chang, 2013; Oldham & Cummings, 1996; Woodman, Sawyer, & Griffin, 1993; Zhou & Shalley, 2010).

The field of psychology has a long history of studying creativity in its different forms (e.g., artistic or scientific). As such, the roots of research into organizational creativity lie in psychology. Early empirical research on creativity was centered on two main approaches: the study of individual differences and of cognitive processes. For example, psychologists have looked into the life and characteristics of highly creative individuals in the arts or sciences (e.g., Mackinnon, 1962; Simonton, 1977). Also, psychologists have developed tests to tap the cognitive processes underlying creativity. Examples include the Alternative Uses Task (Guilford, 1967), the Torrance Test of Creative Thinking (Torrance, 1962), and the Functional Fixedness Problem (Duncker & Lees, 1945). While psychological research on creativity dates back several decades, research on organizational creativity is relatively new. It was only until the late 1980s that researchers actively began to work in this area. Around this time, two primary theoretical models about creativity have emerged: Amabile's (1988) componential model of creativity and Woodman and colleagues' (1993) interactionist perspective of organizational creativity. These theories, which will be discussed in the next paragraphs, also guided the rationale for the empirical chapters in this dissertation.

In several ways, Teresa Amabile can be respectfully viewed as the 'grandmother' of organizational creativity research. First, her definition of creativity as the production of ideas that are both novel and useful (Amabile, 1996) is arguably the most commonly used definition in the organizational behavior domain. According to this definition, to be creative an idea needs to be unique (i.e., it should not exist elsewhere) and it should be potentially useful (i.e., it should hold potential of benefiting an individual or a group). The definition of Amabile is also the definition used in this dissertation (see Chapter 3).

Second, her componential model of creativity (Amabile, 1988, 1996) drew much research interest to the phenomenon of organizational creativity. Specifically, her model proposed three key components of creativity: domain-relevant knowledge, creativity-relevant processes, and task motivation. Domain-relevant knowledge includes having factual knowledge or expertise in a given

domain. Creativity-relevant processes or skills include adopting the appropriate cognitive style and using certain techniques or strategies for producing creative ideas. The third component, task motivation, refers to the attitudes held by an individual toward a task. This motivation can either be intrinsic (i.e., arising from the individual's interest, curiosity, or satisfaction in doing the task) or extrinsic (i.e., arising from sources outside of the task itself). Amabile viewed intrinsic motivation as the hallmark of creativity. She even labeled this view 'the intrinsic motivation principle of creativity': in order to be creative, she argued, more than anything you need to be intrinsically motivated by the task at hand.

Woodman, Sawyer, and Griffin's (1993) interactionist theory of organizational creativity rests on the idea that creativity is an individual level phenomenon that is affected by both situational and dispositional factors. It is the interaction of an individual's disposition and contextual factors that predicts creative performance. Building on this perspective, researchers have investigated, for example, how Big 5 dimensions such as openness interact with characteristics of the work environment to predict creativity (e.g., George & Zhou, 2001; Oldham & Cummings, 1996; Zhou, 2003).

Many reviews of the organizational creativity literature have been produced in recent years (e.g., George, 2007; Hennessey & Amabile, 2010; Shalley & Gilson, 2004; Shalley, Zhou, & Oldham, 2004; Zhou & Shalley, 2008). To provide a brief overview of this literature, I draw on the work of Zhou and Shalley (2010). In their review, they divided the predictors of organizational creativity into three main categories: motivational, cognitive, and affective. The search for motivational predictors of creativity finds its roots in Amabile's (1988) componential theory of creativity. In this theory, intrinsic motivation is said to be essential for creativity: no matter how much knowledge or skills employees possess in a given field, or no matter how skillful employees are in thinking outside the box, if employees are not intrinsically motivated by the task at hand, they simply would not engage and persist in creative behavior (Zhou & Shalley, 2010). The intrinsic motivation perspective has attracted much research attention in organizational behavior and has resulted in an impressive set of studies (Shalley et al., 2004). Typically, these studies did not investigate or

measure intrinsic motivation per se, but they relied on motivation theories to identify contextual factors (such as feedback, leadership, goals, expectations, or rewards) that would either boost or inhibit intrinsic motivation, which in turn would stimulate or restrict employee creativity. Surprisingly, the studies that have directly measured intrinsic motivation in relation to creativity have produced conflicting results. For example, while Amabile has shown that extrinsic rewards diminish creativity because they inhibit intrinsic motivation (Amabile, 1996; Amabile & Gitomer, 1984), Eisenberger has shown that extrinsic motivators can actually spur creativity (Eisenberger & Aselage, 2009; Eisenberger & Rhoades, 2001). In a recent study, Grant and Berry (2011) have taken a step toward resolving these inconsistencies. Across multiple studies, both in the lab and in the field, they showed that the nature of the effect of intrinsic motivation on creativity depends on prosocial motivation. When prosocial motivation is high compared to low, intrinsically motivated employees also engage in more perspective-taking, which stimulates them to create ideas that can benefit others. In turn, this benefits their own creative performance.

The cognitive predictors of creativity form the second category of predictors. Cognition has played a central role in the study of creativity (Zhou & Shalley, 2010) and studying cognition has led to a variety of insights. First, in Amabile's (1988) terms, cognition refers to the domain-relevant knowledge and the creativity-relevant skills of an employee. Domain-relevant expertise is important to develop and select adequate creative ideas. Regarding the creativity-relevant skills, researchers have looked into individual's preferred cognitive styles. Not surprisingly, individuals with an innovative style tend to be more creative than those with a more adaptive style (Tierney, Farmer, & Graen, 1999). Second, researchers have recently started investigating how unconscious thought processes influence creativity. For example, Dijksterhuis and Meurs (2006) have shown that unconscious thought tends to lead to more divergent thinking and to more original ideas. Also relevant for how unconscious thought can influence creativity is a meta-analysis by Sio and Ormerod (2009) on the incubation effect. Sio and Ormerod found that incubation (i.e., a temporary shift in our attention, away from the unsolved problem) seems to facilitate a broad search for knowledge as well as divergent thinking, which in turn can help

individuals to find creative solutions. A third and final demonstration of the cognitive approach to creativity can be found in social network research. Social networks can stimulate creativity because networks provide access to new and diverse information and perspectives. For example, Perry-Smith (2006) showed that weak ties (i.e., relationships characterized by low frequency of contact, short duration, and low levels of closeness) can facilitate creativity because these contacts provided access to non-redundant information.

A third and final category of predictors are affective predictors of creativity. Affect is a general term that typically includes both mood states and emotion (Zhou & Shalley, 2010). For long, academics and practitioners have believed that especially positive moods stimulate creativity. This has led some organizations to create 'relaxation rooms', where employees can put themselves in a calm state of mind, in the hope of coming up with creative breakthrough ideas. However, Baas, De Dreu, and Nijstad (2008) revised the widespread belief that positive moods stimulate creativity while negative moods inhibit creativity. Instead, the meta-analysis by Baas and colleagues showed that it is not the hedonic tone of a mood state (i.e., positive or negative) but rather the activation level of a mood state (i.e., high or low) that drives creativity. Thus, while anger (i.e., a negative, activated mood state) and happiness (i.e., a positive, activated mood state) tend to promote creative thinking, being calm or relaxed (i.e., a positive, deactivated mood state) and feeling depressed (i.e., a negative, deactivated mood state) tend to inhibit creativity. In sum, both positive and negative moods can stimulate creativity, as long as they are activating. Recent research continues to look for ways in which affective experiences influence creative thought. For example, Bledow and colleagues have shown that affective shifts within a work day (i.e., shifting from negative to positive affect) can trigger not only the work engagement of employees, but also their creativity (Bledow, Rosing, & Frese, 2013; Bledow, Schmitt, Frese, & Kuhnel, 2011).

In this section, I provided an overview of the literature on organizational creativity. I discussed the main theories that have informed this literature, as well as some illustrative empirical findings. In the next sections, I will look

deeper into innovation and entrepreneurship. Because creativity lies at the heart of innovation and entrepreneurship (and, hence, this dissertation), the primary purpose of the following sections is to delineate the concepts of innovation and entrepreneurship from creativity, without providing a broad overview of the theories and empirical results in these literatures.

Innovation

Innovation can be defined as the intentional introduction and application within a role, group, or organization of ideas, processes, products, or procedures that are new to the relevant unit of adoption and that are designed to significantly benefit the individual, group, organization, or wider society (West & Farr, 1990). This definition points toward two main differences with the concept of creativity. First, creativity is often seen as a precursor of innovation because innovation refers not only to the introduction or production of ideas, but also to the application of ideas. In other words, in order for an innovation to occur, an idea needs to be implemented. Idea implementation is arguably more important for organizations than idea generation because only an idea that is realized (i.e., turned into a concrete process, product, or service) can truly add to an organization's bottom line performance. Stated otherwise, "ideas are ten a penny: it's idea implementation not idea generation that counts" (West, 2002, p. 411).

A second difference between innovation and creativity is that in order to be innovative, an idea does not necessarily have to be unique. As long as the idea is new for the unit of adoption (such as a team or organization), an idea is seen as innovative. Consider the following example, which was described in Zhou and Shalley (2010). Six sigma, the lean management methodology, was originally developed at Motorola. At the time, it was a creative idea because it did not exist elsewhere. Over the years, however, many other organizations around the world, such as General Electric, adopted the six sigma methodology. While General Electric was being innovative by implementing six sigma (i.e., six sigma was new for their organization), they were not being creative (i.e., the idea already existed at Motorola).

When I refer to innovative work behavior or innovative performance (see Chapter 4), I consider innovation at the level of the individual employee. Innovative performance can be defined as the generation, promotion, and implementation of ideas (Janssen, 2001). Thus, innovative performance refers to the extent to which an employee performs three activities. First, the employee needs to generate ideas or bring in ideas from outside the organization. Second, the employee has to promote the idea and gain approval for it (e.g., by presenting it to the top management of the organization). Third, the employee has to work actively toward the implementation of the idea, for example by making a working prototype or writing a detailed business plan. Although these three activities (i.e., idea generation, promotion, and implementation) are important for innovative performance, we acknowledge that these three activities will not always be performed by the same employee to the same extent. Some employees might be better at generating ideas, other employees might be more influential and successful in promoting ideas with top management, and others might show the necessary persistence and drive to turn an idea into a concrete innovation.

Entrepreneurship

Entrepreneurship, defined as the identification, evaluation, and exploitation of opportunities (Shane & Venkataraman, 2000), is often seen as the engine of an economy. Historically, the study of entrepreneurship began with the study of entrepreneurs. To identify the personal characteristics of entrepreneurs, researchers have examined the differences between entrepreneurs and other populations on a numbers of traits. For example, studies have shown that entrepreneurs tend to be more optimistic (e.g., Cooper, Woo, & Dunkelberg, 1988), have a higher tolerance for ambiguity (e.g., Begley & Boyd, 1987), and a higher risk propensity (Stewart & Roth, 2001) than managers and the general population. More recently, entrepreneurship is viewed as the nexus between an individual and an opportunity (Shane & Venkataraman, 2000). This view stands for a more interactive approach, where entrepreneurship is not just about entrepreneurs, but also about the opportunities that these entrepreneurs identify, evaluate, and exploit.

Entrepreneurial opportunities are situations in which it is possible to recombine resources in a way that generates a profit (Shane, 2012). Opportunities thus refer to the objective environment (e.g., government regulation, technological advances). Business ideas, on the other hand, are entrepreneurs' *interpretation* of how to recombine resources in a way that allows the pursuit of that opportunity (Shane, 2012). In this subjective recombination process, new means-ends relationships are formed by combining resources in a novel way such that a profit can be generated. Hence, it is in this entrepreneurial recombination process that creativity resides. To illustrate the distinction between opportunity and business idea, consider the example of Leonardo Da Vinci's idea of air travel. While historical records show that Da Vinci thought of the idea of air travel, the available technologies at that time (i.e., the objective opportunity) did not exist, making it impossible for Leonardo Da Vinci to act on his business idea.

Entrepreneurship can occur under different organizational arrangements. For example, entrepreneurship can refer to the formation of entirely new ventures, but entrepreneurship can also be undertaken by people in existing firms (Shane, 2012). When entrepreneurship occurs within a firm, we often refer to this as intrapreneurship. Intrapreneurship can be described as the practice, by one or more employees, of developing a new venture within an existing organization (Parker, 2011). An example of intrapreneurship can be found in university spin-offs. In these spin-offs, the technology or knowledge is usually developed at the university and then taken to the market. Intrapreneurship thus also differs from individual innovation because innovation is focused on developing new processes, products, or procedures within a group or organization, while intrapreneurship refers to developing a new *business* from within an organization.

THE ROLE OF FEEDBACK IN CREATIVITY, INNOVATION, AND ENTREPRENEURSHIP

Spurred by the work of Zhou and colleagues, past research has produced valuable insights into the role of feedback in promoting and nurturing employee creativity. These studies (George & Zhou, 2001; Zhou, 1998, 2003; Zhou & George, 2001) suggest that positive feedback is conducive to creativity and that feedback should be delivered in an informational style or with a developmental orientation. The positive effects of feedback on employee creativity can be understood through a number of mechanisms. First, feedback has been proposed to enhance employees' intrinsic motivation (Zhou, 2008), which is a central concept in the creativity literature (Amabile, 1996). Specifically, most of the research linking feedback to creativity has built on cognitive evaluation theory (Deci & Ryan, 1985). According to cognitive evaluation theory, whether feedback boosts or diminishes an employee's intrinsic motivation depends on whether the feedback is informational or controlling. While informational feedback provides support to employees as well as information about which aspects of an idea were good and which can be improved, controlling feedback poses external pressure to feedback recipients which constricts their autonomy. When informational feedback is provided, employees tend to feel competent and self-determining, and thus their intrinsic motivation is likely to be high. On the other hand, when controlling feedback is provided, employees tend to feel pressured instead of self-determined. Consequently, their intrinsic motivation is likely to be low. Second, feedback also has cognitive effects on employees. For example, feedback can clarify the standards against which the creative output of employees is compared (Zhou, 2008). As such, feedback serves a signaling function to clarify which ideas are valued in an organization. In addition, feedback is important for learning (Rogers, 1969). For example, feedback can help employees to acquire creativity-relevant skills, such as identifying the most pressing problems or refining ideas (Zhou, 2008). Finally, feedback can also provide employees with new perspectives on their idea, which can be added to the idea to make it more creative (Kanter, 1988).

As with the feedback-performance relationship (cf. supra), the feedback-creative performance relationship is not always straightforward. For example, while Zhou (1998) found that positive but not negative feedback promoted creative performance, Akinola and Mendes (2008) found that negative feedback (in the form of social rejection of ideas) was associated with greater creative performance on artistic tasks. Likewise, the *feedback seeking*-creative performance relationship is not straightforward either. While De Stobbeleir, Ashford, and Buyens (2011) have shown that seeking feedback from a diverse set of feedback sources is associated with higher creative performance, research on social networks suggests that seeking feedback from a large and diverse network also brings costs that can hamper creative performance (Nahapiet & Ghoshal, 1998). In sum, the current literature on feedback and creativity paints a promising picture, but points to the need of examining moderating factors that explain when feedback and feedback-seeking behavior are conducive to creative performance and when they are not.

In contrast to the relatively well-developed literature on feedback and creativity, virtually no research has investigated the impact of feedback on innovation and entrepreneurship. This is unfortunate, because innovation and entrepreneurship are often regarded as feedback-driven processes (Bhave, 1994). In response to this dearth of research, I aim to build new knowledge on the value of feedback in innovative (Chapter 4) and entrepreneurial activities (Chapter 2).

The next section provides an overview of the empirical chapters of this dissertation and explains how this dissertation advances the scientific domain's understanding of the role of feedback in creativity, innovation, and entrepreneurship.

THE PRESENT DISSERTATION

The present dissertation presents three empirical studies that shed new light on the role of feedback in creativity, innovation, and entrepreneurship. The meta-analyses discussed in the literature review on feedback and feedback-seeking behavior (Anseel et al., 2013; Kluger & DeNisi, 1996) pointed toward the complexity of the feedback phenomenon and the potential value in considering moderators in the relationship between feedback (or feedback-

seeking behavior) and performance outcomes. Hence, I adopted an interactionist approach to feedback in each chapter. Using the interactionist approach (Woodman et al., 1993) as the common thread underlying this dissertation, the three chapters investigate the personal and contextual conditions that explain when feedback promotes creativity, innovation, and entrepreneurship, and when it inhibits them. These chapters have been written with the help of several co-authors: Frederik Anseel, Veroniek Collewaert, Alain De Beuckelaer, Toon Devloo, and Jacob Vermeire. For this reason, I use the 'we'-form in these chapters.

In the first empirical study (Chapter 2), I aim to introduce feedback-seeking behavior to the entrepreneurship literature. Past research has shown that entrepreneurial passion impacts important entrepreneurial outcomes such as venture growth and the time spent on entrepreneurial activities (e.g., Baum & Locke, 2004; Murnieks, Mosakowski, & Cardon, 2013). Although passion thus clearly matters for entrepreneurship, it is still unclear how entrepreneurial passion develops over time and which factors influence this development. To improve our understanding of how entrepreneurial passion evolves over time, this study draws on the job demands-resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) to posit role ambiguity as an important role demand that can diminish entrepreneurs' passion level over time. Role ambiguity refers to uncertainty regarding the priorities, expectations, and evaluation criteria held by stakeholders of the venture, such as customers or investors. In addition, I use the buffer hypothesis of the job demands-resources model to argue that feedback-seeking behavior comprises a proactive way in which entrepreneurs can build resources that buffer against the negative impact of role ambiguity on entrepreneurial passion. To investigate these hypothesized interrelationships over time, I use a longitudinal design covering 10 months where I link feedback-seeking behavior and changes in role ambiguity to changes in entrepreneurial passion. In addition, I investigate whether entrepreneurial passion impacts specific venture creation activities. Specifically, I test whether high passion can motivate entrepreneurs to turn their energy and creativity into patents, copyrights, or trademarks.

The second empirical study (Chapter 3) looks deeper into the feedback seeking-performance relationship. The lack of a strong relationship between feedback-seeking behavior and performance has recently emerged as one of the striking findings of the literature on feedback-seeking behavior (Anseel et al., 2013). In this study, I argue that one potential reason for this issue is that previous studies have looked almost exclusively to the supervisor as a source of feedback. In reality, employees can seek feedback from a wide range of sources, both within and outside their team or organization, and feedback from these sources can be quite diverse. Following this, the question of how employees deal with feedback from different sources is still left largely unanswered. To answer when diverse feedback-seeking behavior will increase or decrease performance, I look at one type of performance where employees are highly likely to seek and obtain diverse feedback, namely creative performance. Using insights from social network research, I argue that seeking feedback from a large and diverse network can not only provide benefits to employees (such as access to new perspectives which can improve an idea) but that it can also bring important cognitive costs (such as how to integrate feedback messages that are conflicting). To improve our understanding of the conditions under which feedback seeking from diverse sources will increase or decrease creative performance, I look at the moderating impact of creative time pressure and charismatic-transformational leadership. While lower levels creative time pressure are expected to enhance employees' epistemic motivation to deeply process the different feedback messages, charismatic-transformational leadership can instill a prosocial motivation among followers that motivates them to integrate the diverse messages. Thus, I propose an interaction model where the impact of feedback seeking from diverse sources on creative performance is moderated by creative time pressure, charismatic-transformational leadership, and the interaction between these factors. In addition, I investigate whether charismatic-transformational leadership indeed instills a higher prosocial motivation among followers by examining its impact on followers' other orientation. In this study, I also introduce a novel way of studying feedback-seeking behavior by adopting a measure from social network research.

The third and final empirical study (Chapter 4) looks deeper into self-supervisor agreement of innovative performance. While I argue that self-supervisor agreement is important for the success of the innovation process, I also point toward the potential impact of self-enhancement motives on self-ratings of innovative performance. Specifically, I propose that self-enhancement motives can lead employees to overestimate their own innovative performance, leading to lower self-supervisor agreement. I argue that a supportive feedback environment and a strong team climate for innovation can reduce self-enhancement motives among followers and thus improve self-supervisor agreement of innovative performance. In addition, we propose an interaction effect where a positive team climate for innovation can strengthen the positive effect of feedback environment on self-supervisor agreement of innovative performance.

This dissertation ends with Chapter 5, in which I present the general conclusions as well as the theoretical and practical implications which can be drawn from the empirical chapters.

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CHAPTER 2

KEEPING THE FIRE BURNING: DYNAMICS OF ROLE AMBIGUITY, FEEDBACK-SEEKING BEHAVIOR, AND ENTREPRENEURIAL PASSION

This chapter is based on: Crommelinck, M., Collewaert, V., Vermeire, J., De Beuckelaer, A., & Anseel, F. (2013). Keeping the fire burning: Dynamics of role ambiguity, feedback-seeking behavior and entrepreneurial passion. *Manuscript in preparation.*

ABSTRACT

Because entrepreneurial passion has a central impact on entrepreneurial success, it is important for researchers to understand how entrepreneurs' passion can be maintained and developed over time. Past research, however, has been equivocal regarding the dynamic nature of entrepreneurial passion. In this paper, we aim to resolve this issue by distinguishing between the two components of entrepreneurial passion (i.e., intense positive feelings and identity centrality). A longitudinal study with three time waves covering 10 months was designed and data were gathered from 114 entrepreneurs in the founding phase. We argued and showed that while intense positive feelings tend to decrease over time, identity centrality tends to be stable. In order to explain what drives changes in intense positive feelings of passion, we built on the Job Demands-Resources Model to hypothesize that entrepreneurs in the founding stage are confronted with increasing levels of role ambiguity and that increasing role ambiguity will lead to stronger declines in intense positive feelings of passion, unless entrepreneurs proactively seek feedback from external sources. Results supported these hypotheses. We further added to the importance of entrepreneurial passion by showing that high passion motivates entrepreneurs to obtain patents, copyrights, or trademarks. Our findings suggest that future research should separately measure and study the two components of passion and that feedback-seeking behavior can be a personal resource that allows entrepreneurs to keep their fire burning.

INTRODUCTION

Practitioners and academics alike have long been acclaiming the value of entrepreneurial passion. It is this "fire in the belly" of entrepreneurs that makes them pursue their dreams and "that makes the improbable possible" (Smilor, 1997, p. 342). Passion drives entrepreneurs to overcome the barriers they meet along their way, to persist in the face of challenges, and to commit the necessary effort to succeed at their own ventures (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005). Empirical research shows that passion is a key success factor for entrepreneurship, as passion has been found to impact venture growth by increasing entrepreneurs' self-efficacy, vision and goals (Baum & Locke, 2004). Passion also relates positively to entrepreneurs' persistence and creativity (Cardon, Gregoire, Stevens, & Patel, 2013), to the extent to which entrepreneurs are cognitively immersed in their entrepreneurial activities (Cardon et al., 2013), and to the time they spend on those activities (Murnieks, Mosakowski, & Cardon, 2013).

Given the central impact of passion on entrepreneurial success, it is crucial for researchers to understand how entrepreneurs can maintain their initial feelings of passion over longer periods of time. The growing literature on entrepreneurial passion, however, has been equivocal regarding the dynamic nature of entrepreneurial passion. On the one hand, some scholars see entrepreneurial passion as a relatively enduring phenomenon (Cardon et al., 2013; Cardon, Wincent, Singh, & Drnovsek, 2009). On the other hand, more basic findings in psychology have shown that affective constructs such as passion are quite dynamic and that affective experiences are influenced by the external context (e.g., Weiss & Cropanzano, 1996). For instance, a recent study has shown that a positive psychology intervention (i.e., increases in the use of one's strengths) can lead to increases in one's passion levels over time (Forest et al., 2012). In sum, understanding whether and how entrepreneurial passion changes over time is important both from a theoretical and a practical perspective. New insights into the dynamics of passion can give rise to new interventions that support passion during various phases of the entrepreneurial process and potentially increase entrepreneurs' chances of success.

A first aim of this study is to address the diverging perspectives regarding the dynamic nature of entrepreneurial passion. To reconcile the diverging perspectives that are currently articulated in the literature, we distinguish between entrepreneurial passion as intense positive feelings (e.g., being the founder of a venture excites you) and entrepreneurial passion as identity centrality (e.g., being a founder of a venture is an important part of who you are) (Cardon et al., 2013). We argue that inconsistent predictions regarding the dynamics of passion can be resolved by taking into account these two components of entrepreneurial passion. Intense positive feelings may be more susceptible to external influences and thus show temporal variability. In contrast, identity is proposed to be a much more central and stable process. Thus, the identity centrality component of entrepreneurial passion is expected to show temporal stability.

As we expect temporal variability for intense positive feelings of passion, the second aim of this study is to gain a better insight into the drivers of temporal variability in this component of entrepreneurial passion. First, we argue that during the founding stages of new business venturing, entrepreneurs will be confronted with increasing levels of role ambiguity. Next, we posit that entrepreneurs who are confronted with increasing levels of role ambiguity will experience stronger declines in intense positive feelings of passion, unless they proactively seek feedback from external sources. In other words, we expect that entrepreneurs' feedback-seeking behavior can act as a buffer against the impact of role ambiguity on intense positive feelings of passion over time. This hypothesis is in line with the job demands-resources model (JD-R model; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) which predicts that, independent of the specifics of one's profession, job resources (e.g., feedback) will interact with job demands (e.g., role ambiguity) to explain well-being and motivation.

Finally, as a third aim of this study, we aim to bring additional evidence for the importance of entrepreneurial passion by examining objective outcomes. Specifically, we investigate whether passion is instrumental for entrepreneurs in turning their creative business ideas into patents, copyrights or trademarks.

Entrepreneurs may experience different types of passion that relate to different phases of the entrepreneurial process, namely passion for inventing, founding, and developing (Cardon et al., 2013; Cardon et al., 2009). As each type of passion is suggested to be associated with its own set of antecedents and moderators (Cardon et al., 2013; Cardon et al., 2009), we introduce explanatory variables that are specific to passion in the founding phase of the entrepreneurial process. A better understanding of the dynamics of passion in the founding phase is warranted because early stage entrepreneurial efforts have a sizable impact on the venture's survival, development and success (Brush, Manolova, & Edelman, 2008; Burke, Fraser, & Greene, 2010; Delmar & Shane, 2003). Moreover, looking at the underlying motivation of entrepreneurs in the founding phase might provide insight into the important question of why some aspiring entrepreneurs make the leap to venture creation while others do not (Brush et al., 2008; Davidsson & Honig, 2003).

CHANGES IN ENTREPRENEURIAL PASSION

Cardon et al. (2009, p. 517) define entrepreneurial passion as "consciously accessible intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to the self-identity of the entrepreneur". According to this definition, passion consists of two components, namely intense positive feelings on the one hand and identity centrality on the other (Cardon et al., 2009). Intense positive feelings and identity centrality are two formative components of passion (Cardon et al., 2013). Thus, the components of passion are two discrete constructs, each with their own set of antecedents and consequences representing valid areas of inquiry. In the next sections, we will elaborate on the different rates of change that can be expected for intense positive feelings and identity centrality.

Changes in Intense Positive Feelings

The positive feelings component of passion can be expected to be quite dynamic, variable, and easily influenced by the external context. For example, Weiss and Cropanzano (1996) stated that a person's affective experience changes continuously and that emotions rise and fall in response to external

events. Recent research has also shown that even during time intervals as short as one working day, individuals can experience ‘affective shifts’, which are changes from negative to positive affect over the course of a day (Bledow, Rosing, & Frese, 2013; Bledow, Schmitt, Frese, & Kuhnel, 2011). Finally, when considering passion as intense positive feelings, it is important to realize that both the valence (i.e., positive or negative feelings) and intensity (i.e., high or low activation) of affect are variable over time (Kuppens, Van Mechelen, Nezlek, Dossche, & Timmermans, 2007).

Aspiring entrepreneurs will usually start with very high levels of passion, initially providing them with the ‘fire’ needed to found their own venture. These entrepreneurs often have invested a lot of themselves in their idea and when they finally decide to turn the idea into a venture, their level of enthusiasm and confidence in the idea will have risen to a maximum. This is what we tentatively call the ‘honeymoon period’. But when the transition from an idea to a venture is made, the honeymoon period will soon be over. Making the transition from an idea to a venture involves a lot of testing, and the results of this trial-and-error process can challenge the entrepreneurs’ confidence and beliefs. Whether they want to or not, aspiring entrepreneurs will receive information and feedback that can negate their initial hopes and assumptions, for example regarding the technical feasibility of the idea or the realistic market potential. Also, competitors of which the aspiring entrepreneur was not yet aware can come to the forefront. This new information can lead to increasing uncertainty about whether the idea will ever be turned into a successful venture.

In sum, because of the challenges inherent to the founding phase, it will be hard for these entrepreneurs to keep their passion on the same level over time. Initially, aspiring entrepreneurs will have very high levels of intense positive feelings of passion; they might even have fallen ‘in love’ with their own idea or consider it ‘their baby’ (Cardon et al., 2005). However, when making the transition from an initial idea to a venture, these entrepreneurs will encounter many challenges and a rising uncertainty, which can decrease their intense positive feelings of passion over time.

Hypothesis 1a. During the time period of this study (i.e., 10 months), a decreasing trajectory of change will occur in the entrepreneurs' intense positive feelings.

Changes in Identity Centrality

In contrast to the intense positive feelings component of passion, identity tends to be a much more central and stable process. Indeed, although change in one's self-concept is possible (e.g., when encountering new life events such as entering parenthood), identity theory suggests stability in identities and their salience across time and situations (Serpe, 1987; Stryker & Burke, 2000). In an entrepreneurship context, Dobrev and Barnett (2005) examined possible changes in the identity of business founders. They argued that, as the startup ages and grows, the founder's original contribution to the venture becomes devalued, not by choice of the founder but because of external demands for discipline and conformity. These external demands pose pressure on the founder's identity, causing it to be misaligned with the external environment. This misalignment can be resolved in one of two ways. Either the founder redefines his/her identity, for example by taking on a more bureaucratic role in the organization, or the founder does not redefine his/her identity. In the latter case, it is likely that the founder will not stay in the venture. Dobrev and Barnett expected that the founder's identity will most likely not change, and that the founder will leave the venture which he/she founded and make the transition to start another venture. The reason for this is that the entrepreneur's "own conception of identity is slower to adapt than one's socially conferred identity" (Dobrev & Barnett, 2005, p. 436). In other words, changes in the founder's external environment will redefine the founder's identity more rapidly than the founder will. Dobrev and Barnett found support for this rationale, as they found that founders become more likely to leave their organizations as these organizations grow and age. Thus, in line with the relative stability of identity, we do not expect changes in identity centrality over time.

Hypothesis 1b. During the time period of this study (i.e., 10 months), no change (flat trajectory) will occur in entrepreneurs' identity centrality.

In sum, although it is notoriously difficult, on the basis of existing theories, to predict when changes will occur (George & Jones, 2000; Mitchell & James, 2001), we expect a different rate of change for the two components of passion for founding during the time period of this study. We will now focus on the question of what drives changes in entrepreneurial passion over time. For this purpose, we will focus on the hypothesized changes in the intense positive feelings component of passion and we will use the terms passion and intense positive feelings interchangeably.

ROLE AMBIGUITY AND THE JD-R MODEL

We posit role ambiguity as one important factor that can explain why intense positive feelings of passion in the founding phase will decrease. Indeed, Kahn et al. (1964) explained that role ambiguity is especially evident in jobs that require innovation, boundary spanning, or involve complex work tasks – all of which are characteristic of being an entrepreneur (Wincent & Ortqvist, 2009b). In further support of the relevance of role ambiguity for entrepreneurship, past research has documented that entrepreneurs experience higher role ambiguity than managers (Buttner, 1992). The specific role of the entrepreneur is to respond to the expectations of different stakeholders, such as customers, suppliers, investors or employees (Wincent & Ortqvist, 2009a; Wincent, Ortqvist, & Drnovsek, 2008). Because of the complexity and diversity of these stakeholders' needs and desires, the expectations of these stakeholders are likely to be ambiguous to entrepreneurs, especially in the founding phase (Wincent et al., 2008). In sum, the role ambiguity experienced by entrepreneurs springs from the perceived uncertainty of how to perform the role of an entrepreneur and how to respond adequately to the expectations of stakeholders.

Within the JD-R model, role ambiguity is seen as an important job demand. Job demands refer to those aspects of the job that require sustained physical or psychological (i.e., emotional and cognitive) effort and can give rise to certain physiological or psychological costs (Demerouti et al., 2001). Other examples of job demands are high work overload, emotional demands, physical demands, and work-home interference (Bakker, Demerouti, & Euwema, 2005). The central tenet of the JD-R model is that, irrespective of the occupation

involved, job demands may evoke a strain or health impairment process (Bakker & Demerouti, 2007) and that having to deal with increasing demands drains individuals' energy levels and can therefore lead to exhaustion and ill-health (Hockey, 1997). In general, job demands are positively related to burnout (e.g., Bakker, Demerouti, de Boer, & Schaufeli, 2003; Bakker et al., 2005) and particularly to its hallmark exhaustion (e.g., Bakker et al., 2003; Demerouti et al., 2001). Role ambiguity, the job demand under investigation in this paper, is associated with physical symptoms of stress (Nixon, Mazzola, Bauer, Krueger, & Spector, 2011) and lower performance (Rizzo, House, & Lirtzman, 1970; Tubre & Collins, 2000). Role ambiguity tends to consume the emotional energy of entrepreneurs and is typically linked with negative affective responses (Wincent et al., 2008). In line with this, research has found that entrepreneur role ambiguity is associated with increased feelings of depression, exhaustion, burnout (Cordes, Dougherty, & Blum, 1997; Wincent & Ortqvist, 2009a; Wincent et al., 2008), and decreased satisfaction (Wincent & Ortqvist, 2009a). In sum, role ambiguity is an exhausting and unpleasant experience for entrepreneurs.

It can be expected that entrepreneur role ambiguity will increase during the founding phase. Aspiring entrepreneurs need to make the transition from an idea to a business, and past research suggests that the transitional stage between an initial idea and an established business can create role ambiguity and role stress (Wincent & Ortqvist, 2009b). Specifically, during the founding phase, startup entrepreneurs will need to build many new contacts and relationships with outsiders. Startup entrepreneurs need to find a first customer, but soon they may also need to contract a reliable supplier, find an investor, and hire a first employee. New stakeholders imply new expectations to be managed by startup entrepreneurs. When various new stakeholder relationships are added over time, role ambiguity might gradually increase. Indeed, it has been argued that as the startup ages and grows, external demands and expectations pose increasing pressure on entrepreneurs (Dobrev & Barnett, 2005). In sum, in the founding phase the change in the role from inventor to founder will be prominent and entrepreneurs will need to answer to the expectations of an increasing number of

new stakeholders. For these reasons, we expect that role ambiguity will gradually increase during the founding phase of the venture.

Hypothesis 2. During the time period of this study (i.e., 10 months), an increasing trajectory of change will occur in entrepreneurs' role ambiguity.

THE MODERATING ROLE OF FEEDBACK-SEEKING BEHAVIOR

The JD-R model predicts that job demands will interact with job resources to explain well-being and motivation. In the JD-R model, job resources are seen as those aspects of the job that may reduce job demands and the associated physiological or psychological costs. Job resources are functional for achieving one's goals and can stimulate personal growth, learning, and development (Demerouti et al., 2001). In this paper, we focus on feedback-seeking behavior, which refers to the proactive search for evaluative information in the work environment (Ashford & Cummings, 1983). Feedback-seeking behavior has been described as a personal resource (Ashford, 1986; Ashford & Cummings, 1983), as it gives access to feedback about one's functioning and is useful for determining the correctness and adequacy of one's behaviors for attaining personal goals.

The buffer hypothesis of the JD-R model proposes that job resources can mitigate the negative influence of job demands on burnout. In support of the buffer hypothesis, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) found that in cases where the level of job resources was high, the effect of job demands on burnout was significantly reduced. For example, they found that job feedback buffered against the negative impact of physical demands on exhaustion, such that high physical demands did not lead to more exhaustion in case of high job feedback. In another study, Bakker, Demerouti, and Euwema (2005) found that job demands (such as high work overload, emotional demands, physical demands, and work-home interference) did not result in high levels of burnout if employees experienced sufficient job resources (such as autonomy, feedback, social support, or a high-quality relationship with one's supervisor).

In this paper, we propose that feedback-seeking behavior will buffer against the negative impact of increases in role ambiguity on changes in intense positive feelings of passion. First, feedback seeking can help entrepreneurs to clarify role expectations and reduce uncertainty regarding the appropriate behaviors to meet the expectations and needs of diverse stakeholders (De Stobbeleir, Ashford, & Buyens, 2011). Through feedback, entrepreneurs will better know where they stand and what is expected from them. Second, feedback-seeking behavior can provide access to social support needed to overcome the challenges of venture creation. Indeed, social support can decrease role ambiguity because it increases communication between the stakeholders and entrepreneurs (Schaubroeck, Cotton, & Jennings, 1989). Third, aiming to create a venture is a goal-directed activity. In goal-directed activities, feedback has been shown to increase the level of motivation, effort, and performance of individuals (Bandura, 1991; Bandura & Cervone, 1983). Therefore, feedback-seeking behavior can provide entrepreneurs with evaluative information on how well they are doing and, in turn, this feedback information can impact the entrepreneurs' motivation. Fourth and finally, it has been shown that job resources, such as feedback, lead to positive emotions and engagement (Schaufeli & van Rhenen, 2006). In sum, feedback-seeking behavior can help entrepreneurs to clarify the role expectations of stakeholders, build social support, and increase motivation, effort, and positive feelings. Because it builds entrepreneurs' resources, feedback-seeking behavior can be expected to perform as a buffer against the negative impact of role ambiguity on entrepreneurial passion.

Hypothesis 3. The effect of changes in role ambiguity on changes in passion will be moderated by feedback-seeking behavior. Specifically, increases in role ambiguity will be associated with a weaker rate of decreasing change in passion when feedback-seeking behavior is high.

OUTCOMES OF ENTREPRENEURIAL PASSION

Only a few researchers have studied the impact of entrepreneurial drivers such as passion on specific steps and activities in the venture creation process (Shane, Locke, & Collins, 2003). Recent research on passion indicated that

entrepreneurial passion is associated with higher creativity among entrepreneurs (Cardon et al., 2013). In order to expand this research stream and to attest to the importance of entrepreneurial passion in the founding phase, we explore whether high passion for founding allows entrepreneurs to turn their creative ideas into patents, copyrights, or trademarks.

Hypothesis 4. Entrepreneurial passion is positively associated with seeking to obtain a patent, copyright, or trademark.

METHOD

Sample and Procedure

The sample for our study was recruited through a network for entrepreneurs who are in the founding stage of a venture. After obtaining the approval of the network's director, we sent out e-mails in which we invited the members of the network to participate in an online survey. Data were collected at three points in time: T1, T2 (five months after T1), and T3 (five months after T2). At T1, the entrepreneurs were asked to complete survey items providing data on demographic variables, passion, and role ambiguity. Of the 511 entrepreneurs invited at T1, 274 responded (response rate: 53.6%). At T2, the entrepreneurs provided data on passion, role ambiguity, and feedback-seeking behavior. We received 169 responses at T2 (response rate: 61.7%). At T3, the entrepreneurs provided data on passion and whether or not they have sought to obtain a patent, copyright, or trademark; we received 114 responses (response rate: 67.5%). The final sample of 114 entrepreneurs consisted of 19 women (16.7%) and 95 men (83.3%). The average professional experience was 8.61 years (*SD*= 5.19).

Measures

Entrepreneurial passion (T1, T2, T3). Entrepreneurial passion was measured using the scale from Cardon et al. (2013). Intense positive feelings were measured using three items; identity centrality was measured using one item. An example item of intense positive feelings for founding is 'Establishing a new company excites me'. The item for identity centrality was 'Being the founder of a business is an important part of who I am'. Items were scored using

a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. Cronbach's α for the items measuring intense positive feelings was .81 (for T1 items), .78 (for T2 items), and .78 (for T3 items). To quantify intense positive feelings of passion, we used the average indicator score.

Role ambiguity (T1, T2). Role ambiguity was measured with the scale of Rizzo, House, and Lirtzman (1970). Items of this scale were scored using a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. The items of Rizzo et al. were originally developed for a sample of employees. Of the original six-item scale, we excluded one item ('I feel certain about how much authority I have') because this item is much less applicable for entrepreneurs in the founding stage than for employees who are positioned in a hierarchical structure. We slightly adapted the original items to fit better with the context of this study. Sample items are 'I know what my responsibilities are as an entrepreneur' and 'I have clear plans and objectives as an entrepreneur'. Cronbach's α was .81 (for T1 items) and .85 (for T2 items). To quantify this construct, we used the average indicator score.

Feedback-seeking behavior (T2). Feedback-seeking behavior was measured based on the scales of Ashford (1986) and De Stobbeleir, Ashford, & Buyens (2011). We used three items to measure feedback inquiry and five items to measure feedback monitoring. An example item of feedback inquiry is 'How often… did you ask others for their opinion about your work as an entrepreneur?'. An example item of feedback monitoring is 'How often… did you compare yourself with other entrepreneurs?'. Items were scored using a five-point Likert scale (1= *never*; 5= *very frequently)*. To calculate a score for feedback-seeking behavior, we first calculated the mean scores for feedback inquiry and feedback monitoring. Then, we took the unweighted average of these two mean scores. Cronbach's α for the overall scale, based on the eight items, was .81. To quantify this construct, we used the average indicator score.

Seeking to obtain a patent, copyright, or trademark (T3). To measure whether entrepreneurs have sought to obtain a patent, copyright, or trademark, we used a measure developed by Delmar and Shane (2003). Specifically, we asked 'Has the venture sought to obtain a patent, copyright, or trademark?'.

When respondents have sought to obtain at least one of these three creative outcomes (i.e., a patent, copyright, or trademark), they responded with 'yes'. When respondents have not sought to obtain at least one of these three creative outcomes, they answered 'no'. To quantify this construct, 'yes' was coded as '1' and 'no' was coded as '0'.

Evaluation of Non-Random Sampling

To evaluate the possibility of non-random sampling effects affecting subject attrition in our longitudinal design, we adopted the approach described by Goodman and Blum (1996). The results of our analysis indicated presence of non-random sampling only for the role ambiguity construct and only when considering the transition from T1 to T3. Specifically, we found a significant mean difference for role ambiguity between the 'stayers' (making the transition from T1 to T3) and the 'leavers' (participating only at T1 but not at T3); the leavers (*M*= 2.14*)* reported higher mean role ambiguity than the stayers (*M*= 1.85*)*. More importantly, however, the underlying relationships among the key theoretical variables under study were not affected by non-random sampling. Therefore, despite the non-random subject attrition for role ambiguity, we can be confident that subject attrition did not affect our results.

Analytical Approach

To test Hypotheses 1 and 3, we relied on latent growth modeling as implemented in MPlus version 6.11. A parallel processes modeling approach allowed us to explain decreases or increases in passion over time (i.e., the passion slope) based on the interaction between changes in role ambiguity (T1 to T2) and feedback-seeking behavior (T2). In contrast to changes in passion over time (T1, T2 to T3), which was modeled by a slope, changes in role ambiguity (T1 to T2) were calculated using a difference score. Thus, to test Hypothesis 2, we first calculated a change indicator for role ambiguity which was obtained by subtracting the T1 score from the T2 score. We then used a one sample t-test to test whether the change in role ambiguity was significantly different from zero. To test Hypothesis 4, we used logistic regression analyses in SPSS version 19, where we aimed to predict whether entrepreneurs have sought to obtain a patent, copyright, or trademark based on the passion level at T3.

RESULTS

Table 1 represents the means, standard deviations, and bivariate correlations of all constructs. In the next paragraphs, we present the results of our hypothesis tests.

Table 1

Means (M), standard deviations (SD), and bivariate correlations

Variable	*M*	*SD*	1	2	3	4	5	6
T1								
1. Passion (intense positive feelings)	6.12	.84						
2. Role ambiguity	1.85	.88	-.44**					
T2								
3. Passion (intense positive feelings)	6.01	.88	.54**	-.45**				
4. Role ambiguity	2.18	1.16	-.16	.57**	-.25**			
5. Feedback-seeking behavior	3.43	.69	.15	.00	.23**	-.01		
T3								
6. Passion (intense positive feelings)	5.92	.83	.51**	-.45**	.62**	-.12	.14	
7. Patent, copyright or trademark	0.34	.48	.18	-.09	.16	-.03	.09	.21*

Note. * $p < .05$ ** $p < .01$.

Hypothesis 1a and 1b referred to the significance and direction of the change in intense positive feelings and identity centrality over time. In line with previous research (e.g., Bentein, Vandenberg, Vandenberghe, & Stinglhamber, 2005), we use μ as the symbol for the mean slope. Supporting hypothesis 1a, we found that the mean slope for intense positive feelings was significant and negative (μ = -.10; $p < .05$). Thus, the extent to which the entrepreneurs felt

intense positive feelings of passion decreased linearly across the time period of this study. In support of hypothesis 1b, we found that the mean slope for identity centrality was not significant (μ = .04; p = .56). Hence, the entrepreneurs' identity centrality did not change across the time period of this study.

Hypothesis 2 examined the significance and direction of the change in role ambiguity over time. Results indicated that role ambiguity increases over time and that this increase is significantly different from zero ($t_{(1,111)}$ = 3.91; p < .001). The mean increase in role ambiguity was .36. Thus, Hypothesis 2 is supported.

Hypothesis 3 focused on explaining the changes in intense positive feelings over time. Table 2 represents the results of the latent growth analysis. Specifically, it shows the effect of focal variables of the study (i.e., role ambiguity T1; change in role ambiguity T1,T2; feedback-seeking behavior T2; interaction between change in role ambiguity T1,T2 and feedback-seeking behavior T2) on the slope for intense positive feelings of passion. The structural model showed excellent fit. The χ^2 was not significant (χ^2 = 3.67, df = 5, p = .60) and the fit indices were excellent (CFI= 1.00, RMSEA= 0.00, SRMR= 0.06).

Table 2

Latent growth model results (unstandardized coefficients)

Variable	**Passion slope**
Role ambiguity (T1)	.03
Change in role ambiguity (T1,T2)	.07
Feedback-seeking behavior (T2)	-.04
Interaction	.16*
R^2	.26

Note. * p < .05.

Regarding hypothesis 3, the results of our analyses indicated a significant interaction between changes in role ambiguity (T1,T2) and feedback-seeking behavior (T2) on the passion slope (see Table 2). This interaction effect is depicted in Figure 1 and can be interpreted as follows. For entrepreneurs who seek more feedback, a stronger increase in role ambiguity leads to a more positive passion slope (i.e., weaker decreases in intense positive feelings of passion over time). For entrepreneurs who seek less feedback, a stronger increase in role ambiguity leads to a more negative passion slope (i.e., stronger decreases in intense positive feelings of passion over time). As such, these findings indicate that feedback-seeking behavior can serve as a buffer against increases in role ambiguity. This is in line with hypothesis 3[1].

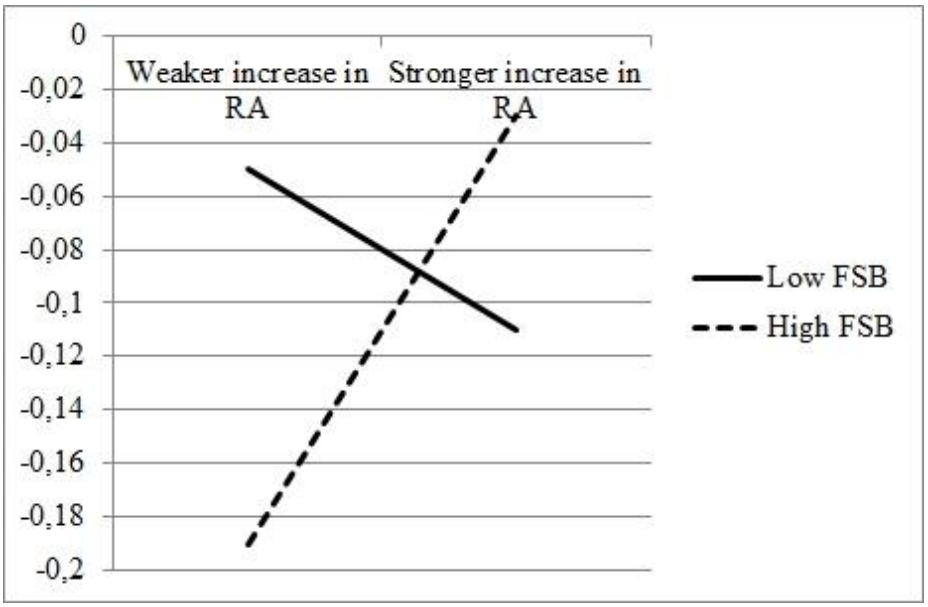

Figure 1. Interaction between changes in role ambiguity (RA; T1,T2) and feedback-seeking behavior (FSB; T2) on the passion slope.

Hypothesis 4 proposed a positive influence of passion on whether entrepreneurs have sought to obtain a patent, copyright, or trademark. In support of this hypothesis, we found that intense positive feelings of passion were positively associated with whether entrepreneurs have sought to obtain a patent, copyright, or trademark (β = .59; p < .05)[1].

DISCUSSION

As entrepreneurial passion is crucial for entrepreneurial success (Baum & Locke, 2004), the current study set out to understand how entrepreneurs' passion can be maintained and developed over time. A first aim was to shed more light on the seemingly inconsistent perspectives articulated in the literature regarding the dynamic nature of entrepreneurial passion. In line with our hypotheses, our results indicate that these inconsistent perspectives can be resolved by distinguishing between the two components of entrepreneurial passion (i.e., entrepreneurial passion as intense positive feelings and entrepreneurial passion as identity centrality). Specifically, we found that the mean slope for intense positive feelings of passion was significant and negative; that is, the extent to which the entrepreneurs felt intense positive feelings of passion decreased linearly across the time period of this study. This finding might be understood by a 'honeymoon effect'. Aspiring entrepreneurs usually start at very high levels of intense positive feelings of passion (e.g., at Time 1, the entrepreneurs in our study scored on average 6.12 on the seven-point intense positive feelings scale). These intense positive feelings initially provide entrepreneurs with the 'fire' needed to found their own venture. However, when making the transition from an initial invigorating idea to a profitable venture, entrepreneurs encounter many new challenges and unforeseen daily hassles which can decrease their intense positive feelings of passion over time. In contrast to the changes in intense positive feelings, we found that entrepreneurs' identity centrality was stable over time. This is in line with identity theory which suggests stability in identities and their salience across time and situations (Serpe, 1987; Stryker & Burke, 2000).

Our results differ to some extent from the conclusions of a recent study by Cardon et al. (2013). In their study, they measured entrepreneurs' intense positive feelings and identity centrality at two points in time, with 18 months in between. Their results did not reveal any significant differences between the passion levels at the two points in time. One tentative explanation for the diverging conclusions of both studies might be found in the specific sample studied. In the Cardon et al. (2013) study, the respondents were CEO's of established firms. On average, these firms were 7.9 years old, had 22 employees

and generated sales of $1.25 million. The responding CEO's were 38 years old on average, with more than 15 years of industry experience. In contrast, the entrepreneurs in our study were 33 years old on average (i.e., 5 years younger than the sample of Cardon et al.), with 9 years of professional experience (i.e., 6 years less experience than the sample of Cardon et al.). In addition, the entrepreneurs in our study were startup entrepreneurs in the founding phase of a venture. Hence, not only were the entrepreneurs in our sample younger and less experienced, the ventures under investigation were also much less established than the ventures under study in Cardon et al. (2013). As such, the age and experience level of the entrepreneurs, together with the life cycle of the venture, might account for the different conclusions in our study and the study of Cardon et al. (2013).

Our findings regarding the dynamic nature of the two components of entrepreneurial passion have important implications for theorizing and research on passion. On the basis of this study, researchers who are interested in studying how entrepreneurial passion evolves over time are advised to separately measure the two passion components (i.e., intense positive feelings and identity centrality). Intense positive feelings and identity centrality are two discrete constructs, each with their own set of antecedents and consequences (Cardon et al., 2013). Future research can separately study the processes underlying the two passion components. For example, intense positive feelings of passion might relate primarily to specific events that have an impact on entrepreneurs' immediate affective experience (Weiss & Cropanzano, 1996). In contrast, identity centrality might be more related to the early experiences of an entrepreneur, such as the entrepreneurs' initial attachment to their original idea (Cardon et al., 2005).

The second aim of this study was to gain a better insight into the drivers of the changes in intense positive feelings of passion. We argued that entrepreneurs in the founding phase will be confronted with increasing levels of role ambiguity and that increasing levels of role ambiguity will lead to stronger declines in intense positive feelings of passion, unless entrepreneurs proactively seek feedback from external sources. The results were supportive of our

hypotheses. We found that the role ambiguity experienced by entrepreneurs in the founding phase increased over time. A possible reason for this increase is that entrepreneurs in the founding phase need to make a change from the role of inventor to the role of founder. Making the transition to a new role can give rise to role ambiguity (Wincent & Ortqvist, 2009b). In addition, entrepreneurs in the founding phase need to answer to the expectations of an increasing number of new stakeholders, which can raise ambiguity regarding which priorities to set and how to respond to diverse stakeholder expectations.

Building on the JD-R model, we further hypothesized and found that feedback-seeking behavior can act as a buffer against the negative impact of increasing role ambiguity on entrepreneurs' intense positive feelings of passion over time. For entrepreneurs who seek more feedback, a stronger increase in role ambiguity led to a more positive passion slope (i.e., weaker decreases in intense positive feelings of passion over time). For entrepreneurs who seek less feedback, a stronger increase in role ambiguity led to a more negative passion slope (i.e., stronger decreases in intense positive feelings of passion over time). This finding indicates that proactively seeking feedback can help entrepreneurs to clarify the expectations of stakeholders and build social support in order to maintain their passion level.

Entrepreneurship researchers have started examining role ambiguity in the entrepreneurial process. For instance, researchers have investigated aspects of the venture environment as predictors of role ambiguity, and exhaustion and venture withdrawal as outcomes of role ambiguity (Wincent & Ortqvist, 2009a; Wincent et al., 2008). Our study extends this growing line of research by looking at potential moderators of the relationship between role ambiguity and entrepreneurial outcomes. This is important because prior research on role ambiguity has urged scholars to identify variables that moderate role ambiguity's effects (Gilboa, Shirom, Fried, & Cooper, 2008; Tubre & Collins, 2000). We advanced one moderator that is under the personal control of the entrepreneur, namely proactive feedback-seeking behavior, and we argued that feedback-seeking behavior can act as a buffer against the negative impact of role ambiguity on entrepreneurial outcomes such as passion. Although

entrepreneurship is conceived as a feedback-driven process (Bhave, 1994), limited research has looked at the role of feedback in the entrepreneurial process. This is unfortunate because existing research shows that feedback can be beneficial for entrepreneurs' learning and adaptation (Haynie, Shepherd, & Patzelt, 2012; Shepherd & Zacharakis, 2002). The current findings add to this literature by showing that feedback-seeking behavior is a personal resource for entrepreneurs and that feedback seeking can help entrepreneurs to maintain their passion over time. Inspired by the JDR-model, future research can look deeper into the impact of other job demands (such as work-family conflict) and job resources (such as social support) on the dynamics of entrepreneurial passion.

The third and final aim of this study was to further document the importance of studying entrepreneurial passion by examining objective outcomes. Past research has shown that entrepreneurial passion has an impact on venture growth and on entrepreneurs' creativity, persistence, and time investment in their venture (Baum & Locke, 2004; Cardon et al., 2013; Murnieks et al., 2013). We extended this previous evidence by showing that intense positive feelings for founding can also motivate entrepreneurs to obtain patents, copyrights, or trademarks. This finding is important because, in light of increasingly global competition, protecting an idea can be crucial in the founding phase of a venture (Delmar & Shane, 2003).

Practical Implications

The lean startup methodology is an increasingly popular methodology among startup entrepreneurs (Blank, 2005; Ries, 2011). This methodology focuses specifically on rapid experimentation, actual measurement of progress, and active learning from customers. One key piece of advice that this methodology gives to entrepreneurs is to 'get out of the building'. Getting out of the building means taking the assumptions that underlie an entrepreneur's business idea and testing them by asking feedback from customers. By getting out of the building, startup entrepreneurs can discover flaws in their business concept early on and gain feedback on how to overcome these flaws.

The present research underscores the proposed value of feedback-seeking behavior for startup entrepreneurs. Specifically, we found that entrepreneurs can cope more effectively with role ambiguity when they seek more feedback. In light of these results, entrepreneurs can be encouraged to seek feedback, for example by developing their learning orientation (Anseel, Lievens, Beattey, Shen, & Sackett, 2013). Alternatively, entrepreneur networks can take initiatives such as regular feedback sessions to answer to the feedback needs of startup entrepreneurs. In sum, entrepreneurship education can focus on stimulating feedback and feedback-seeking behavior in order to keep entrepreneurs' fire burning.

Limitations and Directions for Future Research

When interpreting the findings of our study, a number of limitations should be taken into account. First, we used self-ratings to measure the constructs in this study. The use of common sources or raters can increase the risk of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). While we acknowledge the threats of using self-report measures, we believe they do not pose a major threat to the conclusions of our study. First, we adopted a longitudinal design that included multiple measurements over time. Having multiple measurement over time can reduce the risk of common method bias (Podsakoff et al., 2003). Second, some of the constructs under study (i.e., entrepreneurial passion and role ambiguity) are subjective experiences that are difficult to observe by outside sources. Therefore, the use of self-ratings was preferred for these constructs. Third, although we used entrepreneurs' self-ratings on the question whether they have sought to obtain a patent, copyright, or trademark, the answer to this question should be relatively clear and objective (i.e., either yes or no).

A second limitation to this study relates to the measurement of some of the constructs. First, we used one-item measures for identity centrality and for seeking to obtain a patent, copyright, or trademark. Identity centrality was measured using a one-item scale by Cardon et al. (2013). Seeking to obtain a patent, copyright, or trademark was measured using a one-item scale by Delmar and Shane (2003). Because we used one-item scales for these constructs, we

have no indication regarding the reliability of these scales. Second, role ambiguity and entrepreneurial passion were measured at multiple points in time. Although this is a strength of the present study, this also leads to questions regarding the measurement invariance of the factorial spaces of these multi-item scales. To test for measurement invariance in a post-hoc manner, we used the procedure described by van de Vijver and Leung (1997). On the basis of this procedure, it can be concluded that the factorial spaces of the multi-item scales under study were invariant across time (T1, T2). This implies that the structural relationships between the theoretically relevant constructs may be assessed and meaningfully compared across time.

A third limitation to this study is that we focused exclusively on entrepreneurial passion for founding and on entrepreneurs in the founding phase. Future research needs to investigate whether our results generalize to passion types associated with other phases of the entrepreneurial process, such as passion for inventing and passion for developing (Cardon et al., 2013; Cardon et al., 2009). Passion for inventing refers to entrepreneurs' passion for activities that are related to identifying, inventing and exploring new opportunities. It might be that when entrepreneurs develop their business idea over time, they can become increasingly convinced of the potential value their idea, thus showing increasing enthusiasm and passion for their idea (i.e., a positive slope for intense positive feelings of passion). Future research could examine how passion develops during the invention phase to test this possibility. The third type of entrepreneurial passion identified by Cardon and colleagues is passion for developing. Passion for developing refers to entrepreneurs' passion for activities that are related to growing and expanding the founded venture. It might be expected that passion for developing (and more specifically the intense positive feelings component) will be more stable over time than passion for founding. For example, Cardon et al. (2013) concluded that passion for developing shows stability over 18 months among experienced CEO's of established firms, which are likely to be focused on developing.

Fourth and finally, our study introduced the concept of proactive feedback-seeking behavior to the entrepreneurship literature. Given that this study was a first step in uncovering the impact of entrepreneurs' feedback seeking, we confined ourselves to a relatively basic conceptualization of feedback-seeking behavior. Future research can look deeper into other important aspects of feedback-seeking behavior, such as the type of feedback sought and received, as well as the sources from whom entrepreneurs seek feedback. Regarding the type of feedback sought and received by entrepreneurs, future research can distinguish between outcome feedback (e.g., feedback regarding the outcome of a decision) and cognitive feedback (e.g., feedback regarding the thought process or cognitive strategies underlying a decision) (Haynie et al., 2012; Shepherd & Zacharakis, 2002). Researchers can also examine whether entrepreneurs seek and receive mostly positive versus negative feedback (for a study with managers, see Ashford & Tsui, 1991). Alternatively, researchers can distinguish between operational (i.e., feedback about the quality and features of a specific product) versus strategic feedback (i.e., feedback about the validity of the entire business model) (Bhave, 1994). Another question for future research is from whom entrepreneurs seek feedback. Researchers have already uncovered some of the distinct source attributes that underlie feedback seekers' preferences for certain feedback sources in organizations (Shah, 1998; Vancouver & Morrison, 1995). For example, Vancouver and Morrison found that individuals intend to seek more feedback from sources whom they have a good relationship with, who are accessible, who have high expertise, and who have high reward power (i.e., who can affect the outcomes that the feedback seeker may receive).

CONCLUSION

Past research has been equivocal regarding the dynamic nature of entrepreneurial passion. In this paper, we aimed to resolve this issue by distinguishing between the two components of entrepreneurial passion (i.e., intense positive feelings and identity centrality). We argued and showed in a sample of entrepreneurs in the founding phase that while intense positive feelings tend to decrease over time, identity centrality tends to be stable. In addition, we showed that entrepreneurs in the founding stage are confronted

with increasing levels of role ambiguity and that increasing role ambiguity will lead to stronger declines in intense positive feelings of passion, unless entrepreneurs proactively seek feedback from external sources. Finally, we found that entrepreneurial passion also motivates entrepreneurs to obtain patents, copyrights, or trademarks.

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FOOTNOTE

[1]: Adding age, gender, and professional experience as control variables did not change the significance or interpretation of these results.

CHAPTER 3

UNTANGLING THE FEEDBACK SEEKING-PERFORMANCE RELATIONSHIP: WHEN FEEDBACK SOURCES PROVIDE DIVERSE MESSAGES

This chapter is based on: Crommelinck, M., Anseel, F., & De Beuckelaer, A. (2013). Untangling the feedback seeking-performance relationship: When feedback sources provide diverse messages. *Manuscript in preparation.*

ABSTRACT

A striking finding in the literature on feedback-seeking behavior is the lack of a strong relationship between feedback seeking and performance. One potential reason for this finding is that past studies have almost exclusively focused on the direct supervisor as a source of feedback, while in reality employees can seek feedback from a wide range of sources. It is argued that employees who seek feedback from a diverse set of sources are likely to receive diverse feedback messages, especially when seeking feedback on creative ideas. In this paper, we therefore focus on creative performance and argue that diverse feedback seeking will only lead to higher creative performance under certain conditions. Building on lay epistemic theory and recent insights on prosocial motivation, we develop a conceptual model that proposes creative time pressure and charismatic-transformational leadership as moderators of the feedback seeking-creative performance relationship. We tested this model among 186 employees of a local hospital. Results indicate that diverse feedback seeking can lead to higher creative performance under low creative time pressure and high charismatic-transformational leadership, and that the moderating effect of charismatic-transformational leadership is mediated through followers' other-orientation. Surprisingly, we also find that diverse feedback seeking can lead to higher creative performance under high creative time pressure and low charismatic-transformational leadership. Our findings point toward the complexity of the feedback seeking-performance relationship and the need to consider personal and contextual characteristics that moderate this relationship.

INTRODUCTION

Providing feedback is seen as one of the most accepted and applied psychological interventions to stimulate employee learning, motivation, and performance. As most employees find it important to know how they are doing in their jobs, feedback seems to appeal to a basic human need. Many workers today, however, find themselves in a feedback vacuum (Ashford, Blatt, & VandeWalle, 2003). This points to the value of feedback-seeking behavior, which refers to the proactive search for evaluative information in the work environment. This more active, as opposed to passive, approach to feedback in organizations has spurred research for over 30 years, ever since the seminal work of Ashford and Cummings (1983). The key premise of the literature on feedback-seeking behavior is that feedback seeking is a valuable personal resource that benefits employees and organizations. Feedback-seeking behavior allows employees to gain evaluative information about the effectiveness of their behavior, discover opportunities for skill improvement, and obtain information about the dominant behavioral norms in a team or organization. As such, feedback-seeking behavior can have a positive impact on employee adaptation, learning, and performance (for a recent overview, see Crommelinck & Anseel, 2013).

However, when we look closely at the feedback seeking-performance relationship, the empirical picture does not seem as straightforward as proposed. Specifically, some studies have reported positive effects of feedback seeking on performance (Ashford & Northcraft, 1992; Ashford & Tsui, 1991; Morrison & Weldon, 1990), some studies have failed to find support for a positive relationship (Ang, Cummings, Straub, & Early, 1993; Ashford & Black, 1996; Klich & Feldman, 1992), and other studies even reported a negative relationship between feedback-seeking behavior and performance (Brown, Ganesan, & Challagalla, 2001; Fedor, Rensvold, & Adams, 1992). This pattern of findings is also reflected in a recent meta-analysis of the literature on feedback-seeking behavior (Anseel, Lievens, Beattey, Shen, & Sackett, 2013), which showed that the relationship between feedback-seeking behavior and performance was positive, but weak (ρ = .07). Moreover, the credibility interval for the feedback

seeking-performance relationship included zero, which indicates that moderators may be influencing this relationship (Whitener, 1990). In sum, the lack of a strong relationship between feedback seeking and performance has emerged as one of the striking findings of the current state of the literature on feedback-seeking behavior.

In this study, we argue that one reason for the lack of a strong relationship between feedback seeking and performance is that past research has mainly focused on the direct supervisor as a source of feedback, while in reality employees can seek feedback from a wide range of sources, such as managers or coworkers in other departments, employees in other organizations, and even family members and friends. The feedback messages provided by different sources can be quite diverse, and it can be expected that only under certain conditions diverse feedback messages will lead to improved performance. First, the multiple perspectives gained through feedback seeking yield a sizeable amount of new information that requires intense cognitive processing before it can be employed to improve performance. Second, feedback information acquired via diverse contacts may be fundamentally different from the employee's existing views and thus challenge one's previously held beliefs. In addition, diverse feedback sources may also provide conflicting information, requiring substantial integrative work on the part of the employee (Baer, 2010; Zhou, 2008).

One type of performance for which employees are especially likely to seek and receive diverse feedback is creative performance. In her review of the literature on feedback and creativity, Zhou (2008, p. 141) argued: "Employees often receive feedback from multiple sources, and feedback messages coming out of those resources can be quite inconsistent". Indeed, different feedback sources often have different views about the creativity of an employee's idea. Although there can be potential value in this feedback diversity, we argue that the rationale that feedback acquired from a wide diversity of feedback sources will lead to increased performance should not be taken for granted. Seeking diverse feedback may pose serious information processing demands to employees. When these information processing demands cannot be adequately

overcome, employees are less likely to benefit from diverse feedback seeking and their creative performance is likely to suffer. In contrast, when the right conditions are present, employees can be expected to do the necessary information processing and improve their creative performance. In sum, this calls for a better understanding of the conditions under which seeking feedback from a diverse set of sources will result in increased or, alternatively, decreased creative performance. Otherwise stated, we expect moderators to influence the feedback seeking-creative performance relationship. A better insight into these moderating conditions should not only help us to address the question when diverse feedback seeking is instrumental to creative performance, but it will also provide new insights into an important but previously underexplored question in the literature on feedback-seeking behavior: how do employees deal with feedback from different sources?

In sum, we aim to contribute to the literature on the feedback seeking-performance relationship in three ways. First, using insights from lay epistemic theory (Kruglanski, 1989), which points toward individuals' motivation to carefully process information, and recent research on prosocial motivation (e.g., Grant & Berry, 2011), which points toward individuals' motivation to benefit others, we develop and test a conceptual model that describes the conditions needed for diverse feedback seeking to translate into higher performance. Such increased attention to the boundary conditions of the feedback seeking-performance relationship is sorely needed because previous studies have produced inconsistent results (Anseel et al., 2013; Crommelinck & Anseel, 2013). Second, in contrast to previous research that has almost exclusively looked at the direct supervisor as a source of feedback, we argue that employees often seek feedback from a diverse set of sources, both within and outside the organization. Explicitly acknowledging that employees seek and receive feedback from a wide array of sources is important because this allows new questions to be explored, such as how employees deal with diverse feedback. In this paper, we specifically focus on diverse feedback seeking in the context of creative performance, as creativity is an area where feedback will often be diverse (Zhou, 2008). Third, we develop a social network measure of diverse feedback seeking, which aims to capture more finely the extent to which

employees seek diverse feedback. When we acknowledge that employees operate in a rich social environment and that they can seek and receive feedback from a wide range of social sources, social network analysis is a very promising avenue for shedding new light on feedback-seeking behavior. As such, we take a first step in bridging the literature on feedback-seeking behavior with the social network literature.

DIVERSE FEEDBACK SEEKING AND CREATIVE PERFORMANCE

In today's dynamic world of work, employee creative performance is widely recognized as an important asset for organizational innovation, effectiveness, and survival (Amabile, 1996; Gong, Zhou, & Chang, 2013; Shalley, Gilson, & Blum, 2009; Woodman, Sawyer, & Griffin, 1993). Creativity is defined as the production of ideas that are both novel and useful for the organization (Amabile, 1988), and it is in part a social process (Amabile, 1988; Perry-Smith & Shalley, 2003; Woodman et al., 1993). By interacting with others, employees' ideas can be refined, expanded, and – eventually – implemented. Past research has uncovered a myriad of social factors that can stimulate or inhibit creativity. For example, working amidst coworkers that are role models for creativity (Zhou, 2003), receiving support from work and non-work sources (Madjar, Oldham, & Pratt, 2002), and experiencing competition between social groups (Baer, Leenders, Oldham, & Vadera, 2010) are social elements that influence employee creativity. In this research stream, contemporary research has shown that feedback from others can have a powerful impact on individuals' creative performance (George & Zhou, 2001; Zhou, 1998; Zhou & George, 2001). Of specific relevance to the present study is the proposition that proactively seeking feedback on ideas can allow employees to self-regulate their creative performance. Indeed, seeking diverse feedback can provide access to new information and perspectives, and by adequately integrating diverse perspectives employees can improve their creative performance. In support of this proposition, a recent study on feedback-seeking behavior showed that employees who sought feedback broadly from a wide range of sources achieved higher creative performance (De Stobbeleir, Ashford, & Buyens, 2011).

The notion that access to diverse information and perspectives can spur creative thought has a long tradition in social network research (Allen, 1977; Granovetter, 1973). A diverse social network can provide exposure to perspectives that are not only different from those of the actor, but also from each other (Granovetter, 1973), and it is often the integration of diverse perspectives that leads to creative contributions (Mumford & Gustafson, 1988). Likewise, Kanter (1988, p. 175) noted that "contact with those who see the world differently is a logical prerequisite to seeing it differently ourselves". Consistent with this notion are the concepts of weak and diverse ties in social network research. Compared to strong ties, weak ties are relationships between people that are relatively low in frequency of contacts, short in duration, and low in closeness. It has been argued that weak ties offer important advantages over strong ties, such as access to new and non-redundant information (Granovetter, 1973). In line with this, several studies showed that weak ties are generally beneficial for creativity (Perry-Smith, 2006; Zhou, Shin, Brass, Choi, & Zhang, 2009). Baer (2010) further expanded our understanding of the social network characteristics that impact creativity as he argued that weak ties are not enough to promote creativity; the ties also have to be diverse. Employees with a diverse personal network are connected to individuals who have different educational or job backgrounds, which makes it more likely that these contacts will provide non-redundant information and perspectives. In Baer's study, employees achieved the highest creative performance when they had an network of intermediate size, weak strength, and high diversity.

There are, however, also important drawbacks to large and diverse networks. First, relationships require time, energy, and attention to establish and maintain, and time, energy, and attention are all limited resources for employees. Second, there are cognitive costs related to large and diverse networks. For example, McFadyen and Cannella (2004) found that as personal relationships increased in number, returns to knowledge creation diminished. In another study, Anderson (2008) showed that large networks and networks with weak ties lead to information benefits, but only for employees who have a high cognitive motivation. Together, these studies indicate that it becomes increasingly difficult to benefit from large and diverse networks, and that the

right context is needed to take advantage of the informational opportunities in these networks.

In sum, social capital has potential value for employees, but it also comes at a cost (Nahapiet & Ghoshal, 1998). Understanding when the potential value of diverse feedback outweighs the costs requires an examination of the moderators of the relationship between diverse feedback seeking and creative performance. We argue that there is a role for managers to create the right context for employees to benefit from diverse feedback. Building on lay epistemic theory (Kruglanski, 1989) and recent research on prosocial motivation (e.g., Grant & Berry, 2011), we focus on the moderating role of creative time pressure and charismatic-transformational leadership. Specifically, we theorize that creative time pressure and charismatic-transformational leadership can respectively impact feedback seekers' epistemic and prosocial motivation, and that these two moderators will also jointly influence the diverse feedback seeking-creative performance relationship (i.e., a three-way interaction). In addition, we will investigate whether the moderating effect of charismatic-transformational leadership occurs by enhancing followers' other-orientation, which is a type of prosocial motivation. We refer to Figure 1 for a summary of our conceptual model.

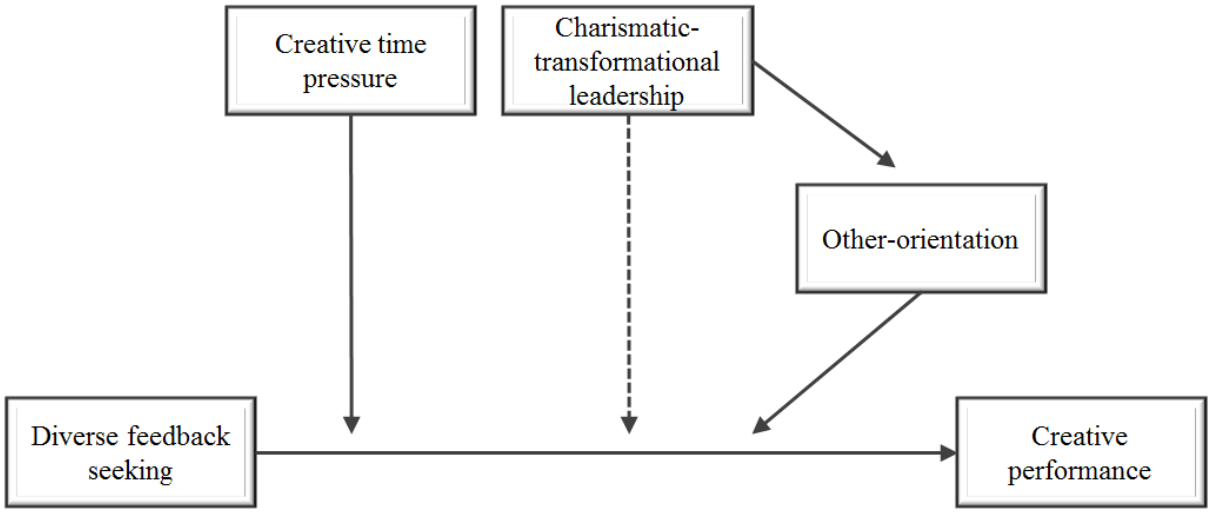

Figure 1. Conceptual Model.

MODERATORS OF THE FEEDBACK SEEKING-CREATIVE PERFORMANCE RELATIONSHIP

Creative Time Pressure

Because diverse feedback messages tend to increase the cognitive demands for feedback recipients, it can be expected that employees are less likely to benefit from diverse feedback without the appropriate cognitive motivation (Anderson, 2008). Indeed, when employees gain access to diverse feedback, they need to be motivated to carefully process each feedback message, to suspend judgment, and to integrate these messages. It is through this integration process that higher creativity can be achieved (Mumford & Gustafson, 1988). In this paper, we argue that the integration process that is crucial for creativity is less likely to occur under high than under low creative time pressure because time pressure lowers employees' epistemic motivation.

Individuals' epistemic motivation, defined as their general motivation to develop an accurate understanding of the world and their environment, is central to lay epistemic theory (Kruglanski, 1989). Thus, according to this theory, epistemic motivation is a key factor for understanding how individuals process information. Another key concept in lay epistemic theory is need for cognitive closure, described as the desire for different kinds and amounts of knowledge (De Dreu, 2003). Need for cognitive closure is an important factor for the processing of large and diverse amounts of information and thus provides a promising lens for studying how employees process diverse feedback messages.

While there are individual differences in epistemic motivation, situational pressures can also raise or reduce epistemic motivation (De Dreu, Nijstad, Bechtoldt, & Baas, 2011). When individuals experience a low epistemic motivation, they tend to leap to judgment on the basis of inconclusive evidence and show cognitive impatience and rigidity of thought. They seize more on information available at the outset and are more reluctant to change their opinion after closure (Kruglanski & Webster, 1996). In contrast, when individuals experience a high epistemic motivation they prefer to suspend judgment, generate multiple interpretations of known facts, and engage in more extensive information processing.

Building on lay epistemic theory (Kruglanski, 1989), we investigate creative time pressure as an important situational characteristic that reduces epistemic motivation and raises the need for cognitive closure. Indeed, past research has demonstrated that time pressure lowers individuals' epistemic motivation and that it heightens the need for cognitive closure (Bechtoldt, De Dreu, Nijstad, & Choi, 2010; Freund, Kruglanski, & Shpitzajzen, 1985; Heaton & Kruglanski, 1991; Kruglanski & Freund, 1983). Time pressure thus induces closing of the mind; it encourages people to stop considering different alternatives and urges them to seek quick solutions in order to find cognitive closure.

In sum, we propose that experienced time pressure affects the processing of diverse feedback information. Because time pressure closes the minds of employees, they are less likely to benefit from diverse feedback and improve their creative performance.

> *Hypothesis 1. The effect of diverse feedback seeking on creative performance is moderated by creative time pressure. Specifically, diverse feedback seeking will have a more positive influence on creative performance when time pressure is low than when it is high.*

Charismatic-Transformational Leadership

Charismatic-transformational leaders are leaders who infuse work with meaning and inspire followers to transcend self-interest for the sake of the collective (De Hoogh & Den Hartog, 2009). In line with this, it has been proposed that charismatic-transformational leadership increases the prosocial motivation of followers (De Dreu et al., 2011) and that it shifts employees' motivation from self-interest to collective interest (van Knippenberg & Sitkin, 2013). For example, in a study by Shin and Zhou (2007), teams with members who have diverse educational specializations were found to achieve higher creative performance when they worked under a charismatic-transformational leader. The authors argued that a charismatic-transformational leadership style motivates team members to utilize the benefits of diversity: not only does charismatic-transformational leadership enhance the belief of followers that they can be creative, it also leads team members to identify more strongly with the

team as a social unit and thus increases their prosocial orientation towards other team members. As a result, charismatic-transformational leadership motivates team members to leverage their diverse perspectives and to combine their ideas into something new and useful.

In this paper, we thus propose charismatic-transformational leadership as a moderator of the diverse feedback seeking-creative performance relationship. The higher prosocial motivation triggered by charismatic-transformational leadership makes it more likely that employees will carefully listen and answer to the feedback from each specific source. Additionally, as argued in Shin and Zhou's (2007) study, charismatic-transformational leaders can help followers to understand the potential value of a diversity of opinions and of different feedback perspectives. Thus, instead of experiencing diverse feedback messages as confusing or inhibiting, employees working under a charismatic-transformational leader can spot the value of diverse feedback messages, and be motivated to seize the opportunity to integrate different perspectives on an idea. As such, we expect charismatic-transformation leadership to moderate the diverse feedback seeking-creative performance relationship.

> *Hypothesis 2. The effect of diverse feedback seeking on creative performance is moderated by charismatic-transformational leadership. Specifically, diverse feedback seeking will have a more positive influence on creative performance when charismatic-transformational leadership is high than when it is low.*

Interactive Effects of Creative Time Pressure and Charismatic-Transformational Leadership

In this paper, we argue that epistemic and prosocial motivations are complementary motivations that can strengthen each other. Specifically, we expect that high charismatic-transformational leadership can strengthen the positive moderating effect of low creative time pressure on the relationship between diverse feedback seeking and creative performance. While low levels of time pressure will prevent employees from closing their minds prematurely from feedback, high charismatic-transformational leadership will inspire followers to develop a prosocial orientation and fully benefit from the diverse

feedback messages. In contrast, when low time pressure is coupled with low charismatic-transformational leadership, low time pressure will still prevent followers from closing their minds but the followers will also be less prosocially oriented. This makes them less likely to benefit from diverse feedback seeking. In line with this proposed interaction, research by Bechtoldt et al. (2010) showed that groups that experienced lower time pressure *and* that had a prosocial motivation generated more ideas and these ideas were also more original.

> *Hypothesis 3. The effect of diverse feedback seeking on creative performance is moderated by creative time pressure and charismatic-transformational leadership. Specifically, diverse feedback seeking will have the strongest positive effect on creative performance when creative time pressure is low and charismatic-transformational leadership is high.*

Indirect Conditional Effect of Charismatic-Transformational Leadership through Other-Orientation

Although it has been proposed theoretically that charismatic-transformational leadership increases the prosocial motivation of followers, it is still unclear whether the effects of certain leadership styles can indeed be attributed to prosocial motivation (De Dreu et al., 2011). Therefore, we aim to empirically verify whether charismatic-transformational leadership enhances followers' other-orientation. Other-orientation is a type of prosocial orientation that is known to focus information processing on social cues and thus leads employees to focus more on other-related information processing than self-related information processing (De Dreu & Nauta, 2009). Building on previous work (De Dreu et al., 2011; Shin & Zhou, 2007), we expect that charismatic-transformational leaders will develop a higher other-orientation among their followers. In addition, we expect that employees high in other-orientation will benefit more from diverse feedback seeking because they process other-related information more deeply. As such, we expect that charismatic-transformational leadership moderates the interactive effect of diverse feedback seeking and creative time pressure on creative performance through its effect on followers' other-orientation (i.e., an indirect conditional effect).

Hypothesis 4. Other-orientation mediates the moderating effect of charismatic-transformational leadership on the association between the diverse feedback seeking-creative time pressure interaction and creative performance.

Before we continue to the Method, Results, and Discussion section, we again refer to Figure 1 for a summary of our conceptual model.

METHOD

Sample and Procedure

The sample for this study consisted of hospital employees. After obtaining the approval of the director of nursing, we handed out paper surveys to the employees, who could put their responses in an envelope and submit it to a letter box that was put in place for the purpose of the study. In total, 448 employees were invited to participate in the study. Of them, 223 employees returned their envelope in the letter box (49.8%). Due to excessive missing data, we had to eliminate 37 cases. Hence, the final sample consisted of 186 employees (41.3%). Self-ratings were obtained for all independent variables. Supervisors provided ratings of employees' creative performance.

Of the 186 employees that provide complete responses to the survey, 159 were female (86%) and 27 were male (14%). The average age within the sample was 38.08 years (*SD*= 10.61) and the employees in our sample had received, on average, 2.97 years of higher education (*SD*= 1.38). In our sample, 155 employees were nurses (83%) and the other 31 employees (17%) performed other functions such as logistic employee and department assistant.

Measures

Diverse feedback seeking. Diverse feedback seeking was measured using a social network measure adopted from Baer (2010). Specifically, respondents were asked: 'Looking back on the past year, with whom have you sought feedback on your ideas about work?'. Respondents could list a maximum of 25 feedback contacts. In line with Baer (2010), respondents were also asked to provide the job category for each of the sources. To establish a measure of feedback seeking diversity, we calculated Blau's (1977) index of heterogeneity

based on the affiliations assigned to each contact: Heterogeneity = $1 - \sum p_i^2$, where p_i is the proportion of contacts in the i-th job category. We asked respondents about their contact's job category because past research has shown that the type of diversity particularly relevant for creative performance includes differences in terms of background, areas of specialization, and work responsibilities (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Perry-Smith & Shalley, 2003; Woodman et al., 1993).

Creative time pressure. Creative time pressure was measured using the five-item experienced creative time pressure-scale of Baer and Oldham (2006). An example item is 'Thinking of new ideas takes time I don't have'. Items were scored using a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. Cronbach's α was .85.

Charismatic-transformational leadership. Charismatic-transformational leadership was measured using the five-item scale of De Hoogh and Den Hartog (2009). An example item is 'Mobilizes a collective sense of mission'. Items were scored using a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. Cronbach's α was .87.

Other-orientation. Other-orientation was measured using the three-item scale of De Dreu and Nauta (2009). An example item is 'At work… I am concerned about the needs and interests of others such as my colleagues'. Items were scored using a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. Cronbach's α was .81.

Creative performance. Creative performance was measured using the thirteen-item scale of George and Zhou (2001). An example item is 'Comes up with creative solutions to problems'. Items were scored by the supervisors using a seven-point Likert scale (1= *strongly disagree*; 7= *strongly agree)*. Cronbach's α was .97.

Control variables. We controlled for employees' age, gender, function, and number of years of higher education. Also, we controlled for the total number of feedback contacts mentioned in the social network measure by an employee (possible values ranging between 1 and 25).

Analytical Approach

We applied hierarchical OLS regression analysis to test the hypothesized interaction effects (Hypothesis 1-3). In the baseline model, we entered the control variables (i.e., age, gender, job function, education, and number of feedback contacts). In the linear model, the main effects were entered in addition to the control variables. In the two-way interaction model, the two-way interaction terms were added to the equation (Hypothesis 1 and 2). These interaction terms were constructed after centering both variables and multiplying the centered means. Finally, in the three-way interaction model, we entered the three-way interaction term (feedback seeking diversity, creative time pressure, and charismatic-transformational leadership; Hypothesis 3).

In order to test the indirect conditional effect hypothesis (Hypothesis 4), we used the approach described by Grant and Berry (2011). We started from the three-way interaction model with charismatic-transformational leadership (cf. supra), and added three more models to the equation. The first model includes the main effect of the mediator, other-orientation. The second model includes the two-way interaction terms with other-orientation. Finally, the last model includes the three-way interaction term between feedback seeking diversity, creative time pressure, and other-orientation. The robustness of the estimates for the hypotheses tests was also verified using classical bootstrapping analysis in SPSS version 19. Each bootstrap analysis was based on 1000 resamples.

RESULTS

Table 1 represents the means, standard deviations, and bivariate correlations of all constructs.

Table 1

Means (M), standard deviations (SD) and bivariate correlations

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Age	38.08	10.61									
2. Gender	0.85	0.35	.07	-							
3. Job function	0.83	0.37	-.03	-.02	-						
4. Education	2.97	1.38	-.02	-.17*	.33**	-					
5. Number of feedback contacts	8.70	5.09	-.12	-.02	.16*	.04	-				
6. Diverse feedback seeking	0.47	0.22	.08	-.02	-.00	.05	.19**	-			
7. Creative time pressure	3.53	1.14	.09	.10	-.10	-.21**	-.04	-.04	-		
8. Charismatic-transformational leadership	5.23	0.89	-.17*	.07	-.03	-.06	-.10	.11	-.19**	-	
9. Other-orientation	5.40	0.88	-.01	.02	-.04	-.10	.10	.16*	-.19**	.35**	-
10. Creative performance	3.12	0.85	-.12	.01	.09	.10	.12	.13	-.16*	.05	.03

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2 represents the results of the hierarchical regression analysis for Hypothesis 1 and 2. With regards to Hypothesis 1, Table 2 (left columns) shows that the two-way interaction between diverse feedback seeking and creative time pressure was not significant ($p > .05$). This finding was reconfirmed by a bootstrap analysis. Therefore, Hypothesis 1 was not supported. With regards to Hypothesis 2, Table 2 (right columns) shows that the two-way interaction between diverse feedback seeking and charismatic-transformational leadership was not significant ($p > .05$). Again, this finding was reconfirmed by a bootstrap analysis. Therefore, Hypothesis 2 was not supported.

Table 2

Regression analyses (unstandardized regression coefficients reported)

Variable	**Creative performance**	**Variable**	**Creative performance**
Age	-.01	Age	-.01
Gender	.10	Gender	.09
Job function	.10	Job function	.11
Education	.04	Education	.05
No. of feedback contacts	.01	No. of feedback contacts	.01
Diverse feedback seeking	.43’	Diverse feedback seeking	.46
Creative time pressure (CTP)	.10’	Charismatic-transformational leadership (Char LS)	.02
Diverse feedback seeking x CTP	.24	Diverse feedback seeking x Char LS	-.08
R^2	.07		.05

Notes. ' p <.10, * p < .05, ** p < .01, *** p < .001

Table 3 represents the results of the hierarchical regression analysis that was used for testing Hypothesis 3 and 4. With regards to Hypothesis 3, Table 3 (Creative performance, step 1) shows that the three-way interaction between diverse feedback seeking, creative time pressure and charismatic-transformational leadership was significant ($p < .05$). This finding was reconfirmed by a bootstrap analysis. To facilitate interpretation of the significant interaction, we followed Dawson and Richter's procedures for probing three-way interactions (Dawson & Richter, 2006). We plotted the simple slopes for each of the four possible combinations of high and low levels of creative time pressure and charismatic-transformational leadership (see Figure 2). Slopes were plotted at the values of one standard deviation above and below the mean (Aiken & West, 1991).

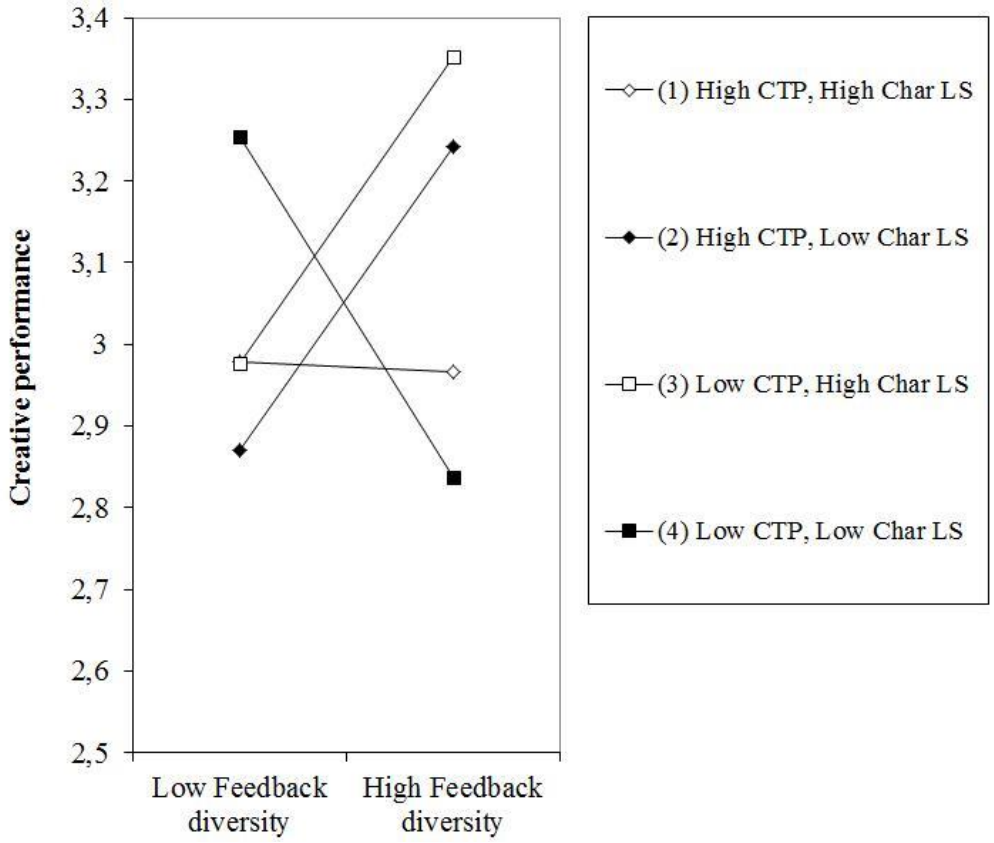

Figure 2. Three-way interaction of diverse feedback seeking, creative time pressure, and charismatic-transformational leadership on creative performance.

Table 3

Regression analyses (unstandardized regression coefficients reported)

Variable	**Other-orientation**	**C.P., step 1**	**C.P., step 2**	**C.P., step 3**
Age	.01	-.01	-.01	-.01
Gender	-.01	.16	.17	.22
Job function	-.14	.07	-.02	.00
Education	-.04	.04	.04	.04
No. of feedback contacts	.02	.01	.01	.01
Diverse feedback seeking	-.04	.18	.35	.21
Creative time pressure (CTP)	-.04	-.04	-.07	-.04
Charismatic-transformational leadership (Char LS)	**.34*****	.01		.02
Diverse feedback seeking x CTP	.65*	.20	.04	.14
Diverse feedback seeking x Char LS	-.06	.26		.16
CTP x Char LS	-.05	-.05		-.02
Diverse feedback seeking x CTP x Char LS	-.77**	**-.66***		-.53
Other-orientation (Other)			-.09	-.10
Diverse feedback seeking x Other			.44	.48
CTP x Other			-.09	-.10
Diverse feedback seeking x CTP x Other			-.63**	**-.49***
R^2	.28	.10	.13	.15

Notes. C.P. = Creative Performance; ' p <.10, * p < .05, ** p < .01, *** p < .001

To enable interpretation of each individual slope, we conducted a series of simple slope tests (where we compared the value of each slope to zero) and slope difference tests (where we compared the value of the slopes in a pairwise manner) (Dawson & Richter, 2006). First, we discuss the results of the simple slope tests (see top of Table 4). The slope for the relationship between diverse feedback seeking and creative performance was, although positive, not significant under low creative time pressure and high charismatic-transformational leadership (Figure 2, slope 3; b = .85 , t = 1.58, p = .12). Thus, Hypothesis 3 was not confirmed when looking at the simple slopes. In contrast to our expectations, we found a positive and marginally significant slope for the relationship between diverse feedback seeking and creative performance under high creative time pressure and low charismatic-transformational leadership (Figure 2, slope 2; b = .85, t = 1.91, p = .06). It thus appears that employees who seek more diverse feedback, experience higher levels of creative time pressure, and work under a less charismatic-transformational leader achieved higher creative performance. This effect was not anticipated and we will get back to this in the Discussion section. None of the other slopes was significantly different from zero.

Table 4

Test of simple slopes

Slope	**b**	***t***
(1) high creative time pressure, high charismatic-transformational leadership	-.03	-.04
(2) high creative time pressure, low charismatic-transformational leadership	.85	1.91'
(3) low creative time pressure, high charismatic-transformational leadership	.85	1.58
(4) low creative time pressure, low charismatic-transformational leadership	-.95	-1.23

Notes. ' p <.10, * p < .05, ** p < .01, *** p < .001

Table 4 (continued)

Test of slopes differences

Pair of slopes	***t***
(1) and (1)	-1,11
(1) and (2)	-0,98
(1) and (3)	0,81
(2) and (3)	-0,01
(2) and (4)	2,17*
(3) and (4)	1,89'

Notes. ' p <.10, * p < .05, ** p < .01, *** p < .001

After conducting the slope difference tests (see Table 4 – continued), we found a significant slope difference between slope 2 and slope 4 (t = 2.17; p < .05). Under *high* creative time pressure and low charismatic-transformational leadership (i.e., slope 2), diverse feedback seeking led to higher creative performance. In contrast, under *low* creative time pressure and low charismatic-transformational leadership (i.e., slope 4), diverse feedback seeking led to lower creative performance. In addition, we found a marginally significant slope difference between slope 3 and slope 4 (t = 1.89; p = .06). Under low creative time pressure and *high* charismatic-transformational leadership (i.e., slope 3), diverse feedback seeking led to higher creative performance (cf., Hypothesis 3). In contrast, under low creative time pressure and *low* charismatic-transformational leadership (i.e., slope 4), diverse feedback seeking led to lower creative performance. Thus, we found some support for Hypothesis 3 when considering the slope differences. None of the other slope differences was significantly different from zero.

We also explored whether the three-way interaction between diverse feedback seeking, creative time pressure and other-orientation was significant. Table 3 (Creative performance, step 2) shows that this three-way interaction was significant (p < .01). This finding was reconfirmed by a bootstrap analysis. Figure 3 illustrates this interaction effect. To facilitate interpretation of the significant interaction, we used the same procedures as for the three-way

interaction between diverse feedback seeking, creative time pressure and charismatic-transformational leadership (Aiken & West, 1991; Dawson & Richter, 2006).

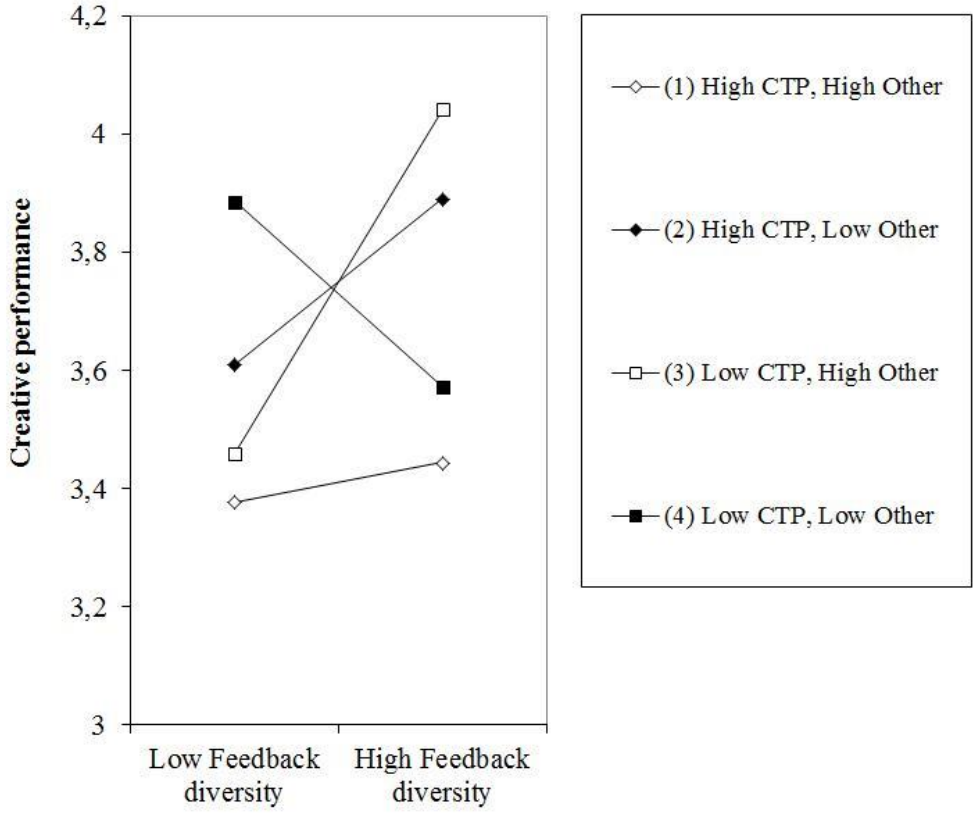

Figure 3. Three-way interaction of diverse feedback seeking, creative time pressure, and other-orientation on creative performance.

With regards to the simple slope tests (see top of Table 5), we found that the slope for the relationship between diverse feedback seeking and creative performance was positive and significant under low creative time pressure and high other-orientation (Figure 3, slope 2; b = 1.33, t = 2.27, p = < .05). None of the other slopes was significantly different from zero. With regards to the slope difference tests (see bottom of Table 5), we found a significant slope difference between slope 2 and slope 4 (t = 2.05; p < .05). Under *high* creative time pressure and low other-orientation (i.e., slope 2), diverse feedback seeking led to higher creative performance. In contrast, under *low* creative time pressure and low other-orientation (i.e., slope 4), diverse feedback seeking led to lower creative performance. In addition, we found a significant slope difference

between slope 3 and slope 4 (t = 2.43; p < .05). Under low creative time pressure and *high* other-orientation (i.e., slope 3), diverse feedback seeking led to higher creative performance. In contrast, under low creative time pressure and *low* other-orientation (i.e., slope 4), diverse feedback seeking led to lower creative performance. None of the other slope differences was significant.

Table 5

Test of simple slopes

Slope	***b***	***t***
(1) high creative time pressure, high other-orientation	.14	.26
(2) high creative time pressure, low other-orientation	.64	1.31
(3) low creative time pressure, high other-orientation	1.33	2.27*
(4) low creative time pressure, low other-orientation	-.71	-1.16

Notes. ' p <.10, * p < .05, ** p < .01, *** p < .001

Test of slopes differences

Pair of slopes	***t***
(1) and (1)	-.84
(1) and (2)	-1.46
(1) and (3)	.92
(2) and (3)	-.80
(2) and (4)	2.05*
(3) and (4)	2.43*

Notes. ' p <.10, * p < .05, ** p < .01, *** p < .001

Finally, with regards to Hypothesis 4, Table 3 shows the results of the indirect conditional effect test for charismatic-transformational leadership. Following Grant and Berry (2011), we took the following steps. First, we investigated whether the three-way interaction effect with charismatic-transformational leadership on creative performance was significant. We indeed found that the three-way interaction between diverse feedback seeking, creative time pressure, and charismatic-transformational leadership was significant (cf.,

Hypothesis 3). Second, we tested whether charismatic-transformational leadership had a significant effect on other-orientation. We indeed found that charismatic-transformational leadership had a significant positive effect on other-orientation (β = .34; p < .01) (Table 3, column Other-orientation). Third, we tested whether the three-way interaction effect with charismatic-transformational leadership was no longer significant when adding the three-way interaction term with other-orientation. We found that after we added the three-way interaction between diverse feedback seeking, creative time pressure and other-orientation to the equation (Creative performance, step 3), this interaction term was significant (p < .05), while the three-way interaction between diverse feedback seeking, creative time pressure and charismatic-transformational leadership was no longer significant. This was the third and final step. As such, these results support Hypothesis 4 in that the conditional effect of charismatic-transformational leadership is mediated through other-orientation. When we replicated these analyses using bootstrapping analysis, the same pattern of results was found, except that the significance of the three-way interaction with other-orientation was now only significant at the p < .10 level (p = .07).

DISCUSSION

Feedback and feedback-seeking behavior are often posited as valuable personal resources, because they hold potential to enhance employee learning, adaptation, and performance (Ashford, 1986; Ashford & Cummings, 1983; Crommelinck & Anseel, 2013). A striking meta-analytical finding in the literature on feedback-seeking behavior, however, is the lack of a strong relationship between feedback seeking and performance (Anseel et al., 2013). Most previous studies on feedback-seeking behavior – and thus the ones included in Anseel et al.'s meta-analysis – have looked almost exclusively at the direct supervisor as a source of feedback. In this paper we argue that one reason for the lack of a strong relationship between feedback seeking and performance is that employees seek feedback not only from their direct supervisor, but from a wide range of sources, both within and outside their organization. Such a broader social perspective has been largely missing in previous research on

feedback-seeking behavior. In addition, we argue that the feedback messages provided by different sources can be quite diverse, and that only under certain conditions diverse messages will lead to improved performance. Because employees are especially likely to seek and receive diverse feedback on creative ideas (Zhou, 2008), we specifically looked at the impact of diverse feedback seeking on performance in the context of creative performance. Hence, building on lay epistemic theory (Kruglanski, 1989) and the literature on prosocial motivation (e.g., Grant & Berry, 2011), we developed a conceptual model defining potential moderators of the relationship between diverse feedback seeking and creative performance.

Our results point out that the relationship between feedback seeking and creative performance is complex. Specifically, none of the two-way interactions were significant; thus, Hypothesis 1 and 2 were not supported. Next, a step toward a more complex model (i.e., a three-way interaction) was taken. We found a significant three-way interaction between diverse feedback seeking, creative time pressure, and charismatic-transformational leadership. In a more exploratory (additional) analysis, we also found a significant three-way interaction between diverse feedback seeking, creative time pressure, and other-orientation. Finally, we found support for an indirect conditional effect of charismatic-transformational leadership through other-orientation. In the next paragraphs, we discuss these findings in more detail.

To interpret the significant three-way interaction between diverse feedback seeking, creative time pressure, and charismatic-transformational leadership, we looked at the significance of the simple slopes and the slope differences. With regards to hypothesis 3, the slope for the relationship between diverse feedback seeking and creative performance was, although positive, not significant under low creative time pressure and high charismatic-transformational leadership. When testing the slope differences, however, we found that this slope (i.e., under the conditions of low creative time pressure and *high* charismatic-transformational leadership) was different from the slope under low creative time pressure and *low* charismatic-transformational leadership ($t = 1.89$; $p = .06$). While the slope under low creative time pressure and *high*

charismatic-transformational leadership was positive, the slope under low creative time pressure and *low* charismatic-transformational leadership was negative. Therefore, these results provide some support for Hypothesis 3, which proposed that diverse feedback seeking would lead to the highest creative performance when creative time pressure is low and charismatic-transformational leadership is high. While low creative time pressure prevents employees from closing their minds from feedback too early, high charismatic-transformational leadership can make employees see the potential value of a diversity of opinions and can motivate them to try to integrate diverse feedback messages.

The significant three-way interaction between feedback seeking, creative time pressure, and other-orientation provides indirect support for the rationale underlying Hypothesis 3 (i.e., the rationale that the prosocial orientation triggered by charismatic-transformational leadership can interact with creative time pressure to predict when diverse feedback seeking will lead to higher creative performance). We found that the slope for the relationship between diverse feedback seeking and creative performance was only positive and significant under low creative time pressure and high other-orientation. In addition, when looking at the slope differences, we found that this slope was significantly different from the (negative) slope under low creative time pressure and low charismatic-transformational leadership.

Together, the interpretation of the two three-way interactions suggests that diverse feedback seeking can improve creative performance if the right conditions are present. First, there needs to be a low creative time pressure so that employees can be epistemically motivated and remain open to the feedback received from diverse sources. Second, employees need to have a high other-orientation or work under a highly charismatic-transformational leader in order to see the benefits of diverse feedback and be motivated to integrate these feedback messages in order to improve their idea. When employees experience low creative time pressure but work under a low charismatic-transformational leader or have a low other-orientation, diverse feedback seeking can actually harm creative performance.

An unexpected finding also emerged, as we found that when employees experienced high levels of creative time pressure and low levels of charismatic-transformational leadership (or low other-orientation), diverse feedback seeking also could improve creative performance. These conditions are very different from the ones hypothesized in Hypothesis 3. First, we found a positive and marginally significant slope for the relationship between diverse feedback seeking and creative performance under high creative time pressure and low charismatic-transformational leadership ($p = .06$). This slope was significant ($p < .05$) when contrasted with the (negative) slope under low creative time pressure and low charismatic-transformational leadership. Second, a significant slope difference was found between diverse feedback seeking under high creative time pressure and low other-orientation (positive slope) and diverse feedback seeking under low creative time pressure and low other-orientation (negative slope).

Although speculative at this time, we offer some potential explanations for this finding. First, Nijstad and Oltmanns (2012) found that when group members are confronted with preference diversity within a group, high epistemic motivation (such as when time pressure is low) can lead to the deferral of decisions. Perhaps being confronted with diverse feedback can sometimes lead employees with low creative time pressure to defer their thinking about the idea and thus lower their creative performance. In contrast, high levels of time pressure might in some instances activate employees to deal with the diverse feedback and not simply let the feedback linger around in their minds. Second, it has been shown that proself as well as prosocial motivations can stimulate creativity. For example, Goncalo and Staw (2006) found that individualism (i.e., proself motivations) can stimulate creativity, while others have found that prosocial motivations fuel creativity (e.g., Bechtoldt et al., 2010; Grant & Berry, 2011). It might be that more proself-oriented employees who seek diverse feedback are not better at integrating the diverse feedback messages, but merely at selecting those messages that can benefit their idea (but discarding other messages). This possibility finds some preliminary support in our finding that diverse feedback seeking could lead to higher creative performance under high creative time pressure and low other-orientation (i.e., significant slope difference

with the slope under low creative time pressure and low other-orientation). Combined, these two explanations suggest that under high levels of creative time pressure and low levels of prosocial motivation (i.e., low charismatic-transformational leadership or low other-orientation), employees might become motivated to actively deal with the diverse feedback, for example by selecting those messages that have the highest potential of improving the idea.

Finally, we found support for an indirect conditional effect of charismatic-transformational leadership through other-orientation. The potential impact of charismatic-transformational leadership on the prosocial motivation of followers was suggested in previous research (De Dreu et al., 2011; Shin & Zhou, 2007), but not yet empirically verified. Using the procedures described by Grant and Berry (2011), we found support for the proposition that the moderating effect of charismatic-transformational leadership could be explained by other-orientation. Thus, by adopting a charismatic-transformational leadership style, managers can instill higher other-orientations with followers. In turn, a higher other-orientation can impact whether employees who seek diverse feedback and experience low levels of creative time pressure can achieve higher creative performance.

Theoretical and Practical Implications

Our results have several implications for theory on feedback-seeking behavior. First, our results indicate that the feedback seeking-performance relationship is complex, often requiring several conditions to be in place before higher performance can be achieved. Building on lay epistemic theory (Kruglanski, 1989), we argued that employees need to be epistemically motivated to remain open to diverse feedback. In addition, we used insights on prosocial motivation (e.g., Grant & Berry, 2011) to argue that employees need to be prosocially motivated to see the value in diverse feedback messages and try to integrate diverse feedback on their idea. Our results show that epistemic and prosocial motivation interact to predict when employees will benefit from seeking diverse feedback. Specifically, our results indicate that contextual factors that are under the control of managers, such as time pressure and charismatic-transformational leadership, can be important moderators of the

feedback seeking-creative performance relationship. Beyond contextual factors, other-orientation (i.e., an individual difference) was also found to play a moderating role.

Second, our research aimed to take a first step in bridging the literature on feedback-seeking behavior and the social network literature. We proposed a broader social perspective on feedback-seeking behavior, because past research on feedback-seeking behavior has mainly looked at the supervisor as a source of feedback. Instead, our findings show that employees seek feedback from a diverse set of sources, both within and outside their organization. In our sample, employees sought feedback from 8.70 feedback sources on average (cf. Table 1). Seeking feedback from many different sources is likely to lead to diverse feedback messages. The social network literature indicates that although diverse information and perspectives accessed through social contacts have important potential to improve (creative) performance, diverse messages also come at a cost (e.g., McFadyen & Cannella, 2004; Nahapiet & Ghoshal, 1998). Thus, we used the social network literature to argue that diverse feedback seeking will lead to higher creative performance only under certain conditions. In addition, we developed a measure of diverse feedback seeking that was inspired by social network research (Baer, 2010). Researchers can use these type of measures to conquer new grounds with research on feedback-seeking behavior.

Third, our results have implications for the creativity literature. As recent research has shown that large social networks can actually decrease employees' creative performance (Baer, 2010; Zhou et al., 2009), our findings add to this literature by showing that seeking feedback from a diverse network can improve creative performance, but only under certain conditions. In addition, our findings indicate that high levels of creative time pressure can actually be beneficial for creative performance when employees seek diverse feedback and have a low charismatic-transformational leader or a low other-orientation. This finding nuances previous research on experienced time pressure and creativity, which has shown that high levels of creative time pressure are generally bad for creativity (Baer & Oldham, 2006). Finally, our finding that employees with a low other-orientation can achieve higher creativity when they seek diverse

feedback and experience high levels of time pressure nuances recent work that demonstrated that prosocial motivation can benefit creativity (Grant & Berry, 2011).

For practitioners, our results indicate that organizations and managers can encourage employees to seek diverse feedback, but that they also need to create the appropriate context for employees in order for them to benefit from the diverse feedback. In creating the right context, managers should pay attention not just to their own leadership style but also to the creative time pressure experienced by employees, because it is the interaction of these two contextual factors that explains when diverse feedback seeking will lead to higher creative performance. Decreasing the time pressure for creativity *and* leading with a charismatic-transformational style can jointly help employees to benefit from diverse feedback seeking. A recent meta-analysis on feedback seeking (Anseel et al., 2013) informs managers that to increase the feedback-seeking behaviors of followers, managers can build a supportive feedback environment (e.g., Steelman, Levy, & Snell, 2004) and develop a high-quality exchange relationship with their followers (e.g., Chen, Lam, & Zhong, 2007).

Limitations and Directions for Future Research

Despite the strengths of our research, our study also has several limitations. First, the sample used for this study consisted of employees working in a hospital. We acknowledge that this is an environment that is different from, for example, a research and development organization where creative performance is more explicitly expected from its employees. Although much of the nursing profession is regulated (e.g., how to apply a certain procedure), from our contacts with the hospital it appeared that there still is enough room for hospital employees to come up with creative ideas. For example, one hospital employee developed an innovative walker for patients, such that they can easily attach their baxter to the walker and adjust the baxter's height. This idea increased the mobility of some of the recovering patients.

Second, our study provides a cross-sectional and rather static perspective on the feedback seeking-creative performance relationship. Therefore, causal conclusions cannot be drawn and we have no information on how employees

actually deal with each feedback message over time. Third, although the rationale for this study came from previous studies on the feedback seeking-performance relationship, in this study we focused on creative performance as a dependent variable. Hence, we have no firm indication regarding the generalizability of our results to performance as typically measured in previous studies on feedback-seeking behavior. Future research should verify whether the proposed interactions also hold for the relationship between feedback-seeking behavior and in-role performance. Fourth and finally, we did not directly assess the mechanisms through which diverse feedback seeking improves performance. It would be an interesting avenue for future research to capture whether or not diverse feedback seeking leads to information benefits, inspired by previous social network research (Anderson, 2008).

Other than the directions for future research that are linked to the limitations of this study, we would like to propose several additional avenues for future research. First, feedback can impact creative performance in several ways. This paper has taken a cognitive approach toward feedback-seeking behavior by arguing that diverse feedback seeking leads to new information and perspectives on an idea that can potentially improve employees' creative performance when the diverse feedback messages are adequately integrated. Doing so, we have answered to previous calls to improve our understanding of the cognitive underpinnings of feedback-seeking behavior (Ashford et al., 2003). Another way in which feedback can improve creative performance is by enhancing intrinsic motivation (Zhou, 2008). Especially positive and informational feedback has been shown to stimulate creativity, because these types of feedback can enhance feedback recipients' feelings of autonomy and self-determination (Zhou, 1998). A third potential way in which feedback seeking can impact creative performance is by changing individuals' affective experience. Indeed, conflicting feedback might sometimes trigger positive as well as negative emotions with the feedback recipient. Past research has shown that such 'ambivalent' emotions (i.e., experiencing positive and negative feelings) can actually benefit creative performance (Fong, 2006). Future research can directly assess these mechanisms (i.e., cognitive, motivational, and affective) through which feedback can impact creative performance. Further

focusing on the cognitive approach to feedback-seeking behavior, researchers can develop experimental and longitudinal designs (such as diary studies) that track employees as they seek feedback on their idea, decide whether or not to adapt their idea, and seek additional feedback with other persons, within or outside their own organization. Finally, future research can investigate how seeking advice on aspects of one's work differs from seeking feedback on specific ideas. Past social network research has mainly looked at advice relationships between individuals, while it would be interesting to see which additional benefits 'feedback relationships' can bring.

CONCLUSION

In this paper, we developed a broader social perspective on feedback-seeking behavior and its relationship with creative performance. We have argued that employees do not just seek feedback from their direct supervisor but from a wide array of feedback sources, and that only under certain conditions diverse feedback seeking will lead to higher creative performance. We found indications that, when employees seek diverse feedback, the combination of low creative time pressure and high charismatic-transformational leadership (or high other-orientation) can enhance their creative performance. Surprisingly, we also found that under high creative time pressure and low charismatic-transformational leadership (or low other-orientation), diverse feedback seeking also led to higher creative performance. These results point toward the complexity of the feedback seeking-performance relationship and the need to consider personal and contextual characteristics that moderate this relationship.

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CHAPTER 4

WHAT MY BOSS THINKS I DO, AND WHAT I ACTUALLY DO: EXPLAINING AGREEMENT BETWEEN SELF- AND SUPERVISOR-RATED INNOVATIVE PERFORMANCE

This chapter is based on: Crommelinck, M.[1], Devloo, T.[1], Anseel, F., & De Beuckelaer, A. (2013). What my boss thinks I do, and what I actually do: Explaining agreement between self- and supervisor rated innovative performance. *Manuscript in preparation.*

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ABSTRACT

Past research on employee innovation has reported low to moderate correlations between self- and supervisor-ratings of innovative performance. These findings are potentially problematic because self-supervisor agreement of innovative performance can have important implications for the innovation process. In this paper, we aim to extend our theoretical understanding of how and when closer agreement between self- and supervisor-ratings of innovative performance can be achieved. By taking a theoretical approach to self-supervisor agreement, we depart from previous research that has discussed disagreement mainly as a methodological artifact. We draw on self-enhancement theory to advance a social context explanation of how self-supervisor agreement of innovative performance can be fostered. Specifically, we hypothesize that agreement is contingent on the feedback environment, the team climate for innovation, and the interplay between these two factors. To test our hypotheses, we collected data at two points in time from 152 employee-supervisor dyads working in the R&D division of a Fortune-500 company. First, we found that employees tend to overestimate their innovative performance compared to the rating of their supervisor. Second, we found that a supportive feedback environment is more strongly associated with self-supervisor agreement when it is combined with a positive team climate for innovation. Our study has implications for how supervisors can reduce self-enhancement tendencies among their employees and, hence, facilitate agreement.

INTRODUCTION

In 2012, the 'What other people think I do' comics were a hit on the internet. These comics displayed how different people (e.g., friends, colleagues, or supervisors) perceive a certain job, and they typically ended with: 'What I actually do'. The main message of these comics is that different people can look at certain job behaviors in entirely different ways. This message resonates strongly with empirical findings on innovative performance, which refers to the generation, promotion, and realization of new ideas by employees (Scott & Bruce, 1994). Previous studies have reported low to moderate correlations between self- and supervisor-ratings of innovative performance. For example, Janssen (2000, 2001) has documented correlations between self- and supervisor-rated innovative performance between r = .27 and .35. In a more recent study, Potočnik and Anderson (2012) reported correlations between self- and supervisor-ratings of innovative performance of r = .10. In the present paper, we want to move beyond a mere documentation of the level of self-supervisor agreement. Instead, we aim to extend our understanding of how and when closer agreement between self- and supervisor-ratings of innovative performance arises. Such a systematic research effort examining antecedents of agreement on innovative performance ratings is sorely needed because of the role that agreement can play in the innovation process. Specifically, research on self-verification shows that high self-other agreement (i.e., being seen by others as one sees oneself) provides employees with a source of stability and coherence (Swann & Read, 1981) and creates a sense of safety for employees which stimulates exploration and innovation (Swann, 2003; Swann, Milton, & Polzer, 2000).

To build a model of self-supervisor agreement for innovative performance, we draw on self-enhancement theory (Sedikides & Gregg, 2008). According to this theory, the way people select, process, remember, and react to information about themselves is motivated; it is subject to one's desire to maintain a positive self-view (Anseel, Lievens, & Levy, 2007). The self-enhancement motive thus posits that individuals tend to seek and recall information that puts them in a favorable light, irrespective of whether this is

justified or not (Crommelinck & Anseel, 2013). In this paper, we explain how self-enhancement strivings might influence self-supervisor agreement of innovative work behavior. It has been proposed that the strength of the self-enhancement motive depends on the type of information that is accessible to employees (Sedikides & Strube, 1997). Therefore, we will focus on the impact on agreement of two types of information that are available from the social environment of employees: feedback environment and team climate for innovation. In addition, we will look at the interplay between these two factors.

We focus specifically on the agreement of self-ratings with supervisor-ratings (instead of other raters) for two reasons. First, the team supervisor plays a key role in the innovation process, as (s)he can act as a gatekeeper for organizational resources flowing to innovative projects. A growing body of research emphasizes the important role that leaders play by responding to, evaluating, and managing new ideas voiced by employees (Ashford, Sutcliffe, & Christianson, 2009; Detert & Burris, 2007). Second, following recommendations by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), creativity and innovation researchers increasingly use supervisor-ratings as the dependent variable in their studies. As supervisor-ratings have become the silver standard in research (i.e., objective measures being the golden standard), it seems fruitful to look deeper into how and when self-ratings and supervisor-ratings of innovative performance converge.

With this study, we aim to contribute to the literature on innovative performance in three ways. First, we build on self-enhancement theory to improve our understanding of how and when closer agreement between self- and supervisor-ratings of innovative performance occurs. Such an improved theoretical understanding provides an important addition to the literature because earlier research has discussed the usage of self- or other-ratings of innovative performance mainly in light of methodological considerations (e.g., threat of common method bias; Ng & Feldman, 2012). Second, our study has implications for research on feedback and team climate for innovation. While past studies have highlighted the impact of feedback and team climate on innovative performance (Anderson & West, 1998; Eisenbeiss, van Knippenberg,

& Boerner, 2008; Zhou, 1998), this study adds to this literature by showing that these factors also impact agreement between self- and supervisor-ratings of innovative performance. Third, our hypotheses may have implications for practice, as they suggest that organizations should focus on social context factors, such as feedback environment and team climate for innovation, when looking for strategies to enhance agreement between self- and supervisor perceptions of innovation.

A SELF-ENHANCEMENT PERSPECTIVE ON SELF-SUPERVISOR AGREEMENT

Self-evaluation is the process by which the self-concept of individuals is socially negotiated and modified. According to a vast body of research on self-motives in social psychology, self-evaluation is not an unintentional process; instead, it is motivated (Sedikides & Strube, 1997). Thus, the way people select, process, remember, and react to information about themselves is a reflection of deeper motives (Anseel et al., 2007).

Arguably the most pre-eminent self-motive is the self-enhancement motive (Sedikides & Gregg, 2007). Individuals driven by self-enhancement motives aim to enhance the favorability of their self-views. Past research has described the need for self-enhancement as a fundamental part of human nature and a basic motive of individuals (Sedikides & Gregg, 2008). One of the best-known manifestations of the self-enhancement motive is the above-average effect. Across several studies, researchers have found that a great majority of people tend to regard themselves as well above the 50^{th} percentile on a number of desirable attributes, such as social grace, teaching ability, and leadership ability (e.g., Alicke, 1985; Cross, 1977; Dunning, 1989; Sedikides & Gregg, 2007). Because it is mathematically impossible that more than half of the people score above the 50^{th} percentile, such self-ascriptions must be incorrect, at least for a sizable subset of respondents.

The self-enhancement tendency of employees, leading them to overestimate their performance compared to others' evaluations, has also been documented with regard to perceptions of job performance (Harris & Schaubroeck, 1988; Heidemeier & Moser, 2009). However, it can be expected

that this tendency will be even more evident for innovative performance. Whereas task performance standards and expectations are typically more clearly defined, there often exists some degree of ambiguity in organizations concerning which behaviors are really innovative and how innovative performance should be managed and evaluated (Eisenhardt, 1985)[1]. Importantly, the ambiguity inherent to innovation makes it even more inviting for employees to self-enhance their ratings (Janssen & van der Vegt, 2011; Sedikides & Gregg, 2007, 2008). This reasoning is in line with meta-analytic findings which showed that agreement depends upon the degree of ambiguity surrounding job behaviors (Harris & Schaubroeck, 1988). For example, job behaviors of blue collar workers are less ambiguous than of white collar workers who have more autonomy; hence, agreement regarding job behaviors of blue collar workers is likely to be higher.

In sum, self-enhancement motives will typically lead employees to bias their self-ratings in a positive manner (Sedikides & Strube, 1997), especially for more ambiguous job behaviors such as innovative performance (Harris & Schaubroeck, 1988). On the basis of self-enhancement theory, we expect employees' self-ratings of innovative performance to be higher than the ratings of their supervisor.

> *Hypothesis 1*: *In general, employees will self-enhance their self-ratings of innovative performance. Specifically, most employees will overestimate their innovative performance compared to the supervisor-rating, and the average self-rating will be higher than the corresponding average supervisor-rating.*

Hypothesis 1 provides the building ground for the present paper, where we aim to explain how certain aspects of the social work environment can impact the strength of the self-enhancement motive and, hence, influence agreement between self- and supervisor-ratings of innovative performance. Research on self-motives states that self-enhancement is triggered by the type of self-evaluative information that is available to people (Sedikides & Strube, 1997). In this regard, the social context can play a key role in how individuals evaluate themselves and the degree to which they enhance their self-views

(Sedikides & Gregg, 2007). We propose two social factors that can provide employees with evaluative information and thus can influence the strength of the self-enhancement motive: feedback environment and team climate for innovation.

THE ROLE OF FEEDBACK ENVIRONMENT

In the interpersonal realm, feedback involves information about how others perceive and evaluate an individual's behavior (Ashford, 1986). Feedback about the self, obtained from social relations, has been described as an important source of self-perceptions (Riley & Burke, 1995). In line with this, feedback interactions are seen as crucial pathways through which self-related information is communicated to and negotiated with employees (Swann, Johnson, & Bosson, 2009). As such, because a sense of self is often formed by face-to-face social interactions (Oyserman & Packer, 1996), it is important to look at the informal, day-to-day feedback process. In this paper, we refer to these day-to-day feedback interactions as the feedback environment (Steelman, Levy, & Snell, 2004). Both the supervisor and the coworkers have been studied as important actors in the feedback environment. In this study, we focus specifically on the feedback environment set by the supervisor because the supervisor is the more authoritative source of information, and therefore potentially the most influential (Anseel & Lievens, 2007; Ashford, 1993; Rosen, Levy, & Hall, 2006). In a supportive supervisory feedback environment, the supervisor is perceived as credible, provides high-quality feedback, delivers feedback clearly and empathetically, delivers both positive and negative feedback when necessary, is accessible, and actively promotes feedback-seeking behavior among subordinates (Steelman et al., 2004).

We argue that a supportive feedback environment can (a) help to clarify the behavioral norms and evaluative criteria for innovation, and (b) improve employees' feedback reactions. First, through feedback interactions with their supervisor, employees can obtain information about the behavioral norms for innovation (e.g., 'What is the best way to develop and promote an idea?'), the reigning expectations for innovative ideas (e.g., 'Is there a preference for incremental versus more radical ideas in this organization?'), and the criteria

employed to evaluate an idea (e.g., ‘Are ideas that promote customer satisfaction welcomed most positively?’). Employees can thus use feedback on these matters to achieve a better understanding of what innovative performance means within the context of their organizational environment and whether they are meeting the innovative standards of the organization.

Second, research has shown that a supportive feedback environment generally leads to favorable feedback reactions and higher acceptance of feedback messages. For example, Steelman et al. (2004) have demonstrated that a supportive feedback environment is related to higher satisfaction with the feedback received, a higher motivation to use the feedback, and increased feedback-seeking behavior. A supportive feedback environment can also aid employees to be more open to negative feedback (Sedikides & Gregg, 2008). In line with this, research has shown that employees can even be satisfied with negative feedback and be motivated to use this feedback, as long as they work in a supportive feedback environment (Steelman et al., 2004). This is important, because employees driven by self-enhancement motives often reject negative feedback (Sedikides & Strube, 1997), which can lead them to overestimate their own innovative performance. By providing feedback on ideas and innovative efforts in a supportive feedback environment, the self-enhancement tendencies of employees can be reduced and feedback reactions can be improved. As such, employees are more likely to adapt their self-perceptions regarding their innovative performance in line with the feedback they receive from their supervisor.

In sum, a supportive feedback environment can clarify norms and expectations for innovation and improve feedback reactions. As such, a supportive feedback environment can reduce self-enhancement motives among employees and lead to higher agreement between self- and supervisor-ratings of innovative performance.

> *Hypothesis 2. A supportive environment is positively associated with agreement between self- and supervisor-ratings of innovative performance.*

THE ROLE OF TEAM CLIMATE FOR INNOVATION

In addition to the feedback obtained from one's supervisor, employees can also obtain information relevant for self-evaluation purposes from observing the behavior of others. Social comparison theory posits that individuals tend to compare themselves with others, especially in the absence of an objective performance standard (Festinger, 1954), which is typically the case for innovative performance. This line of research further suggests that social comparison processes may be distorted by individuals' tendency to self-enhance (Beer, Chester, & Hughes, 2013). For example, individuals who experience failure or negative affect tend to reduce the amount of social comparison (Gibbons, Benbow, & Gerrard, 1994) or make downward rather than upward comparisons in order to maintain a positive self-view (Kruglanski & Mayseless, 1990).

Team climate for innovation refers to the perceptions that individuals hold regarding the norms and practices within their team that foster innovation (West, 1990; West & Farr, 1990). We propose that positive perceptions of the team climate for innovation can mitigate the self-enhancement motive when making social comparisons. First, teams with a positive climate for innovation tend to provide a safe environment for team members to participate and to take risks (Anderson & West, 1998; Strating & Nieboer, 2009). Such participate safety can be expected to reduce the self-enhancement motive. In a safe environment, employees should be confident to show themselves to the team as they really are. In addition, a positive team climate for innovation provides team members with the needed support for ideas (Anderson & West, 1998; Strating & Nieboer, 2009). Thus, when an idea fails, there is less need to cover up the failure. In sum, participative safety and support for innovation should lower team members' need to present themselves in a favorable light and, hence, weaken self-enhancement motives.

Second, a team with a positive team climate for innovation typically exhibits a high task orientation (Anderson & West, 1998). A high task orientation implies that team members are highly focused on the way the teams' tasks are performed and that team members frequently monitor each other's

innovative performance. Because of these monitoring activities, employees are left with fewer opportunities to self-enhance; any sign of self-enhancement is likely to be noticed and corrected by the team.

In sum, because a positive team climate for innovation provides a safe environment for team members to show themselves as they really are and because there is frequent monitoring of task performance and progress, team members can be expected to experience less need and less room to self-enhance. In turn, higher self-supervisor agreement for innovative performance can be expected in a positive team climate for innovation.

Hypothesis 3. A positive team climate for innovation is associated with higher agreement between self- and supervisor-ratings of innovative performance than a less positive team climate for innovation.

THE JOINT IMPACT OF FEEDBACK ENVIRONMENT AND TEAM CLIMATE FOR INNOVATION

In the previous sections, we proposed that feedback environment and team climate for innovation are two important aspects of the social work environment that are expected to reduce self-enhancement strivings and, hence, improve self-supervisor agreement. We expect, however, that these factors will not have independent effects on agreement.

As argued above, a supportive feedback environment should help employees to clarify the behavioral standards and evaluative criteria for innovation, and it should improve employees' feedback reactions. As a result, employees will likely know and accept where they stand and what is expected of them. When a supportive feedback environment is coupled with a *positive* team climate for innovation, team members will not only know where they stand on the basis of supervisor feedback but they will also be able to compare their own innovative performance with other team members more effectively. Indeed, a positive team climate for innovation can provide team members with several concrete behavioral examples and role models for innovative performance. These behavioral examples can help team members to make more sense of the feedback they receive from their supervisor. Hence, the behavioral standards for

innovation can further be clarified and the ambiguity regarding innovative performance can further be reduced. In addition, a positive team climate for innovation provides participative safety and support to team members. Feeling the safety and support of a team can help team members to react more favorably to supervisor feedback. Especially when the supervisor feedback is negative, the support of other team members can help employees to accept the feedback. Hence, these employees will feel less need to put themselves in a favorable light (i.e., self-enhancement motives can be reduced). In sum, a supportive feedback environment and a positive team climate for innovation can complement each other to serve the purpose of reducing the ambiguity surrounding innovative performance and weakening self-enhancement strivings. In turn, higher self-supervisor agreement can be expected.

In contrast, when a supportive feedback environment is coupled with a *less positive* team climate for innovation, there are few behavioral norms for innovative performance in the team. Thus, team members can still be left in the dark about the appropriate innovative behaviors that they need to adopt; considerable ambiguity regarding appropriate innovative performance will remain. In addition, despite having access to supportive supervisor feedback, team members will operate in a less safe team environment. They will be less likely to discuss their failures and be more motivated to put themselves in a favorable light (i.e., they will be more motivated to enhance their self-perceptions). Hence, lower agreement can be expected.

Hypothesis 4. Feedback environment and team climate for innovation will interact in such a way that a supportive feedback environment will have a more positive effect on self-supervisor agreement when team climate for innovation is positive than when it is less positive.

METHOD

Sample and Procedure

The sample of our study concerns the Research & Development division of a Fortune global 500 company (electronics sector). For the employees in our sample, innovative performance was an important aspect of their jobs. Data

were collected at two points in time (T1 and, three months later, T2). At T1, employees were asked to complete survey items providing data on control variables (i.e., gender, age, and education level) and on feedback environment. At T2, the same employees were invited to complete the second survey, which included survey items measuring team climate for innovation and self-rated innovative performance. Furthermore, we asked supervisors to rate their subordinates' innovative performance at T2.

At T1, 312 employees were invited and 226 of them completed the survey (response rate: 72.4%). At T2, only the 226 employees who participated at T1were invited and 170 of them completed the survey (response rate: 75.2%). Due to an excessive proportion of missing data, we omitted one case. Thus, we withheld 169 cases for further analysis.

We asked supervisors to rate the innovative performance of the 226 employees who participated at T1. Of the 226 possible ratings by the supervisors, we received 180 complete ratings (response rate: 79.6%). Of the 180 supervisor-ratings, 152 could be matched with the 169 complete cases that were obtained at T2. The final sample of 152 employees consisted of 21 women (13.82%) and 131 men (86.18%). The average age within the sample was 40.23 years (*SD*=8.87). Education levels varied from secondary education (10.53%), higher education – short type (28.95%), higher education – long type (53.28%) to graduate/ Ph.D. (7.24%).

Measures

Feedback environment (T1). Feedback environment, as set by the supervisor, was measured with the 32-item feedback environment scale from Steelman, Levy and Snell (2004). Items of this scale were scored using a seven-point Likert scale (1= *totally disagree*, 7= *totally agree*). We adapted the original items to better fit with the context of this study (i.e., innovative performance). For example, an original item was: 'My supervisor gives me useful feedback about my job performance'. This item was adapted to 'My supervisor gives me useful feedback about new ideas'[2]. In line with the aim of the study to examine the impact of the general supervisor feedback environment on agreement and consistent with previous research (e.g., Anseel & Lievens,

2007; Dahling, Chau, & O'Malley, 2012; Norris-Watts & Levy, 2004; Rosen et al., 2006; Whitaker, Dahling, & Levy, 2007), feedback environment was operationalized as the mean score of its indicators. The higher the mean score, the more supportive the feedback environment is. Cronbach's alpha for the overall scale was .96.

Team climate for innovation (T2). This construct was measured with the 14-item Team Climate Inventory of Strating and Nieboer (2009). The scale consists of four aspects: vision (four items), participative safety (four items), task orientation (three items), and support for innovation (three items). Sample items were: 'How worthwhile do you think these objectives are to the organization?' (vision); 'People feel understood and accepted by each other' (participative safety); 'Are team members prepared to question the basis of what the team is doing?' (task orientation); 'In this team we take the time needed to develop new ideas' (support for innovation). Items of this scale were scored using a seven-point Likert scale (1=*totally disagree*, 7= *totally agree*). An elaborate four-factorial model of team climate for innovation could be employed (four scores rather than one summative score), but the four factors exhibited high mutual correlations (.73 up to .93). Because of these high correlations and our interest in the general team climate for innovation, we opted for the use of a one-factorial model. Hence, team climate for innovation was operationalized as the mean score of its indicators. Cronbach's alpha for the overall scale was .95.

Innovative performance (T2). This construct was measured with the nine-item scale of Janssen (2000) that assesses individual innovation at work. These nine items measuring the innovative performance of an employee were completed by the employees themselves as well as by their supervisor. The three aspects of innovative performance (i.e., idea generation, three items; idea promotion, three items; idea realization, three items) were included in the scale and respondents were asked to indicate how often employees conducted those innovative behaviors at the workplace in the past three months. Sample items were 'Creating new ideas for difficult issues' (idea generation); 'Mobilizing support for innovative ideas' (idea promotion); 'Transforming innovative ideas into useful applications' (idea realization). Items of this scale were scored on a

seven-point Likert scale (1= *never*, 7= *always*). In line with previous research (Janssen, 2000, 2001), innovative performance was operationalized as the mean score of its indicators. Cronbach's alpha was .94 for the self-rating scale and .95 for the supervisor scale.

Control variables (T1). As previous research on self-other agreement indicates that gender, age and education level (i.e., highest level obtained) may influence the extent to which individuals may under/overrate their own behavior (Ostroff, Atwater, & Feinberg, 2004), we measured these three variables and included them as controls.

Analytical approach

Use of difference scores. In this paper, we conceive self-supervisor agreement as the absolute size of the difference between the self- and supervisor-ratings. Indicators of agreement were calculated in two consecutive steps. In a first step, we computed the difference between self- and supervisor-ratings of innovative performance by subtracting the supervisor-ratings from the self-ratings and then calculated the absolute value of the difference score. The higher the value of the absolute score, the stronger employees and their supervisors disagreed on their innovative performance. In a second step, we transformed the absolute scores into agreement scores by subtracting the difference score from 6, the theoretical maximum for the difference score (i.e., the supervisor or the employee scoring 1, and the other member of the pair scoring a 7). This agreement score can be interpreted as follows: the higher the value, the stronger the agreement between self- and supervisor-ratings of innovative performance. We labeled this variable 'self-supervisor agreement'[3].

We are aware that the use of difference scores as the dependent variable has been subject to critique (e.g., Edwards, 1995) on both reliability grounds and the imposed equal weighting of all algebraic components included in the difference score (here: self- and supervisor-ratings of innovative performance). First, this study uses the agreement score as the dependent variable because imposing equal weighting of self- and supervisor ratings is, at least from a conceptual point of view, not problematical in a study which focuses primarily on the size of the agreement (or difference) between two raters of a behavioral

measure. Second, as mentioned higher, a point of concern may indeed be related to a decrease in the reliability of the difference measure in comparison to its components. However, past research has shown that the decrease in reliability is positively related to the (absolute) size of the correlation between the components (Peter, Churchill, & Brown, 1993). In our study, this correlation turned out to be rather low to moderate (r[supervisor-rating, self-rating] = .33, N=152). Due to this relatively low to moderate correlation (i.e., leading to a lower decrease in reliability) and given our conceptual focus on the absolute difference in self- and supervisor ratings of innovative performance, the use of difference scores seems warranted, at least within the context of this study. Caution is needed in so far that one should be aware that this is a rather conservative test of our hypotheses (due to lower reliability) and that equal weight of the self and supervisor ratings is implied in the difference scores.

Hypotheses testing. In order to test Hypothesis 1, we conducted a one sample t-test to verify whether the score for self-supervisor agreement was significantly different from zero. Next, we applied hierarchical OLS regression analysis to test the main effect of feedback environment (Hypothesis 2), the main effect of team climate for innovation (Hypothesis 3), and the interaction between feedback environment and team climate for innovation (Hypothesis 4) on self-supervisor agreement. In the baseline model, Model 1, we entered the three control variables (i.e., age, gender, and education). In the linear model, Model 2, feedback environment and team climate for innovation were entered in addition to the control variables. In the interaction model, Model 3, the two-way interaction term was added to the equation. This interaction term was constructed after centering both feedback environment as well as team climate for innovation and multiplying the centered means.

Finally, to gain a more fine-grained understanding of the exact nature or direction of disagreement, we also conducted a separate analysis for the employees in our sample which over- versus underestimated their innovative performance (in comparison to the supervisor-rating). Because this is a post-hoc analysis which involves the dichotomization of our sample into over- and underestimators, there are downsides to this approach and caution is needed in

the interpretation of these results. The distinction between over- and underestimators, however, is theoretically relevant for the purpose of this paper and can provide suggestions for future research. This approach is also in line with previous research on self-other agreement which has categorized samples into over- and underestimators (Atwater, Ostroff, Yammarino, & Fleenor, 1998; Atwater & Yammarino, 1992, 1997; Fleenor, McCauley, & Brutus, 1996).

RESULTS

Table 1 represents the means, standard deviations, correlations of all constructs. Regarding Hypothesis 1, we found that self-supervisor agreement was significantly different from zero ($t_{151} = 5.15$; $p < .001$). On average, self-ratings of innovative performance were higher than supervisor-ratings of innovative performance ($M_{self} = 4.78$; $M_{supervisor} = 4.23$). Additional support for our first hypothesis came from the finding that 98 respondents (64.47%) overestimated themselves compared to the supervisor-rating of innovative performance, while only 48 respondents (31.58%) underestimated themselves. For six respondents (3.95%), we found perfect agreement between the ratings. In sum, we found support for Hypothesis 1.

Table 2 represents the results of the hierarchical regression analysis. The baseline model (Model 1) indicates that the overall effect of the control variables was not significant. When the two main effects (feedback environment and team climate for innovation) were entered in Model 2, we did not find a significant effect of feedback environment ($\beta = 0.09$, n.s.) nor team climate for innovation ($\beta = 0.00$, n.s.) on self-supervisor agreement. Thus, Hypothesis 2 and 3 were not supported. In Model 3, we found that the interaction between feedback environment and team climate for innovation had a significant effect on self-supervisor agreement ($\beta = 0.22$, $p < 0.01$). Figure 1 illustrates this significant interaction effect. In support of Hypothesis 4, a supportive feedback environment leads to higher self-supervisor agreement when team climate for innovation is positive than when it is less positive.

Table 1

Means (M), standard deviations (SD), bivariate correlations.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Self-supervisor agreement	1.16	0.88										
2. Innovative performance (self-ratings)	4.78	1.16	-.05									
3. Innovative performance (supervisor-ratings)	4.23	1.17	.50**	.33**								
4. Feedback environment	5.13	0.93	.13	.01	.11							
5. Team climate for innovation	5.19	1.02	.02	.40**	.09	.36**						
6. Age	40.23	8.87	-.18*	.15	-.08	-.20*	.10					
7. Gender	0.14	0.35	.12	-.08	-.13	-.07	.05	-.03				
8. Secondary education	0.10	0.30	-.12	.09	-.14	-.10	.02	.25**	.09			
9. Higher education - short type	0.29	0.45	.03	.01	.13	-.08	.06	.07	.04	-.21**		
10. Higher education - long type	0.54	0.50	.03	-.18*	-.10	.16*	-.12	-.12	-.20**	-.36**	-.68**	
11. Postgraduate/Ph.D.	0.08	0.27	.04	.23**	.12	-.05	.10	-.17*	.20**	-.10	-.18*	-.31**

Note. Gender: male = 0; female = 1; * $p < .05$, ** $p < .01$

Table 2

Results of hierarchical OLS regression analysis of self-supervisor agreement on feedback environment, team climate for innovation, and their interaction (unstandardized regression coefficients)

	All observations (*N* = 152)			**Underestimators only (*N* = 48)**	**Overestimators only (*N* = 98)**
Variable	Model 1 [a]	Model 2 [b]	Model 3 [c]	Model 3 [c]	Model 3 [c]
Age	-0.02	-0.01	-0.02	-0.03**	-0.01
Gender	0.39	0.39	0.33	-0.13	0.40
Education - higher education / short type	0.32	0.31	0.42	-0.29	0.38
Education - higher education / long type	0.27	0.25	0.39	0.05	0.16
Education - post graduate/ Ph.D.	0.18	0.19	0.27	0.12	0.16
Feedback environment		0.09	0.12	-0.09	0.23*
Team climate for innovation		0.00	0.02	0.28**	-0.24*
Interaction Feedback environment x Team climate for innovation			0.22**	0.33*	0.12
R^2	.06	.07	.12	.44	.14

Note. Six participants were not classified as underestimators nor overestimators due to perfect agreement between self- and supervisor-rated innovative performance.
N.A.= not applicable
[a]= Baseline Model, [b] = Linear Model, [c]= Interaction Model
* $p < .05$. ** $p < .01$.

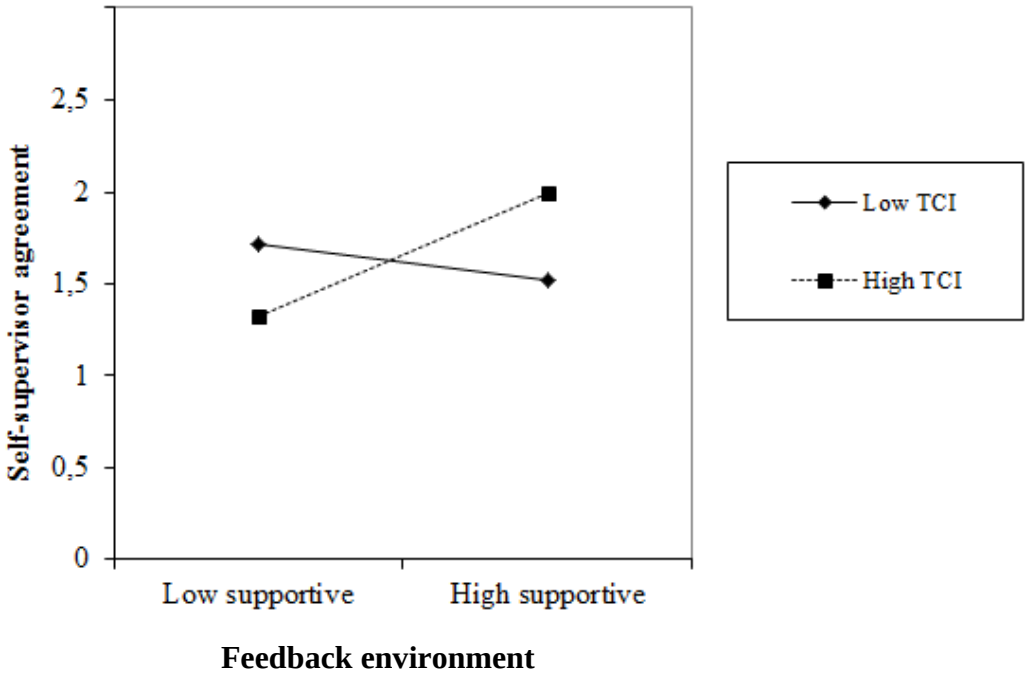

Figure 1. Self-supervisor agreement predicted by the two-way interaction between feedback environment and team climate for innovation (TCI).

Although it is not the focus of our formal hypotheses, we also explored whether the interaction effect between feedback environment and team climate for innovation could be observed when the direction of self-supervisor agreement is taken into account (i.e., in terms of under-and overestimation of employees' own innovative performance in comparison to their supervisor's rating). Therefore, as an additional analysis, we classified the total sample into under– and overestimators and tested the interaction model (Model 3) for each subsample (see Table 2).

Regarding the underestimators of innovative performance, we found a significant interaction effect between feedback environment and team climate for innovation (β = 0.33, p < 0.05). As Figure 2 shows, a supportive feedback environment leads to higher agreement (i.e., less underestimation) when team climate for innovation is positive than when it is less positive. Regarding the overestimation of innovative performance, we found a significant linear effect of feedback environment (β = 0.23, p < 0.05) and of team climate for innovation (β = -0.24, p < 0.05) on self-supervisor agreement for the overestimators. Thus, a

supportive feedback environment was associated with higher agreement (i.e., lower overestimation). In contrast, a positive team climate for innovation was associated with lower agreement (i.e., increased overestimation). The interaction between feedback environment and team climate for innovation was not significant.

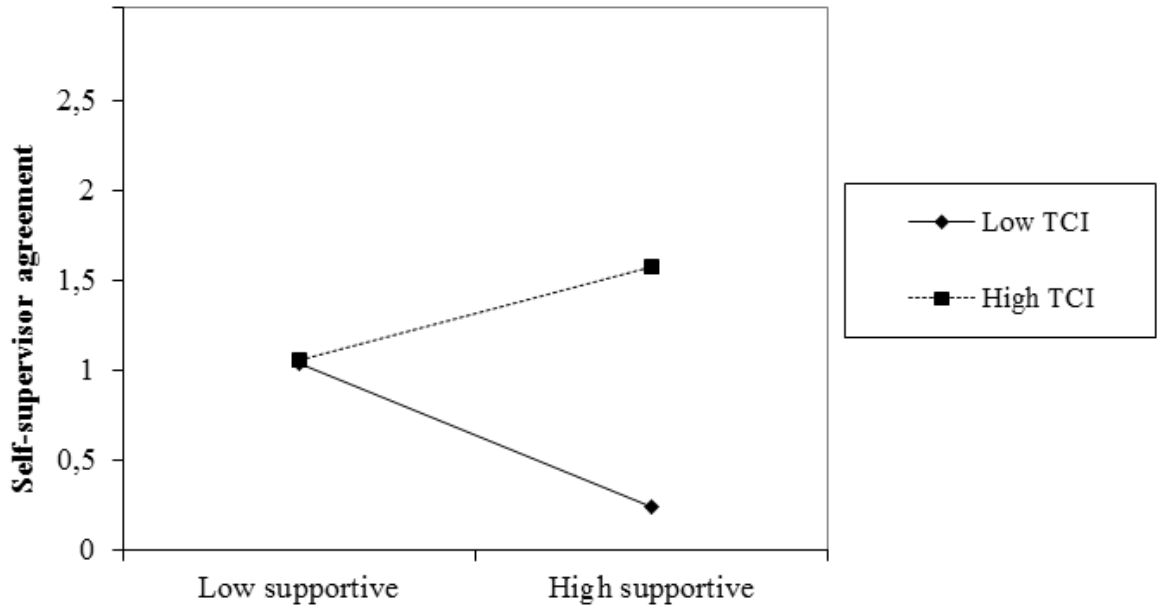

Figure 2. Self-supervisor agreement of innovative performance for the underestimators in the sample, predicted by the two-way interaction between feedback environment and team climate for innovation (TCI).

DISCUSSION

Around the world, organizations are trying to stimulate employee innovation in order to respond to a continuously changing market (Amabile, 1996; Woodman, Sawyer, & Griffin, 1993). Recent innovation research, however, has demonstrated that employees tend to hold different perceptions from their supervisor concerning one's innovative performance (Janssen, 2000, 2001; Ng & Feldman, 2012; Potočnik & Anderson, 2012). This lack of agreement might impede organization's efforts to effectively stimulate innovative performance among employees.

In this paper, we have sought to explain how and when agreement between self- and supervisor-ratings occurs. We advanced a self-enhancement

model, which entails a social context explanation of how agreement concerning innovative performance arises. As such, we explored an alternative explanation to the assumption that low agreement is mainly related to methodological problems. Our results are generally supportive of the role of self-enhancement in ratings of innovative performance. We observed that the majority of employees in our sample overestimated their innovative performance in comparison with supervisor-ratings, and that the average self-rating was higher than the average supervisor-rating. Our results further suggest that feedback environment and team climate for innovation are best regarded in concert in order to understand self-supervisor agreement. Indeed, we did not find a significant main effect of feedback environment, nor of team climate for innovation, on self-supervisor agreement. However, we observed that a supportive feedback environment was associated with higher agreement when team climate for innovation is positive than when it is less positive (i.e., a significant interaction effect). This finding was in line with our expectation that feedback environment and team climate for innovation can jointly reduce the ambiguity regarding innovative performance and weaken employees' self-enhancement motives.

In a more explorative (additional) analysis, we divided our sample into under- and overestimators. Although we have to interpret these results with caution, they might allow a more fine-grained understanding of (dis)agreement. Looking at the *underestimators* in our sample (overall R^2 = .44), the results suggest that when a supportive feedback environment is coupled with a positive team climate for innovation, agreement tends to be higher: employees are less likely to underestimate their innovative performance relative to supervisor-ratings. When a supportive feedback environment is coupled with a less positive team climate for innovation, agreement tends to be lower: employees are more likely to underestimate their innovative performance. These results suggest that underestimators who receive feedback from their supervisor may need the support and encouragement of their team members (i.e., a positive team climate for innovation) in order to react appropriately to the feedback received, and, hence, not to underestimate their own contributions.

Looking at the *overestimators* in our sample (overall $R^2 = .14$), no support for an interaction effect was found. Instead, our results revealed that feedback environment and team climate for innovation independently affect the extent to which employees overestimate their innovative performance. Specifically, we found that a supportive feedback environment tends to be associated with higher agreement (i.e., lower overestimation). Because feedback can direct employees' attention to unmet performance expectations, employees' self-perceptions may become more realistic in their self-ratings. In contrast to the effect of a supportive feedback environment, a positive team climate for innovation tends to be associated with lower agreement (i.e., increased overestimation). A possible reason for this unexpected positive effect of team climate for innovation on overestimation may be that the positive expectations of innovative performance inherent to a positive team climate for innovation might strengthen team members' self-beliefs regarding innovative performance and may even lead to overconfidence in one's abilities (Bandura, 1997; Tierney & Farmer, 2004). As we did not explicitly measure employees' self-beliefs regarding innovative performance, this explanation remains speculative.

Theoretical, Methodological, and Practical Implications

The present study has important implications for innovation research, which has frequently reported diverging self- and supervisor-ratings of innovative performance (e.g., Janssen, 2000, 2001; Potočnik & Anderson, 2012). First, building on self-enhancement theory, our study provides a theoretical rationale for why self-perceptions of innovative behavior are likely to be self-enhanced. Second, by investigating whether social factors such as feedback environment and team climate for innovation can reduce self-enhancement strivings, we shed new light on self-supervisor agreement. In this study, we found that a supportive feedback environment and a positive team climate for innovation can complement each other to improve agreement. Specifically, a supportive feedback environment was associated with higher agreement when team climate for innovation is positive than when it is less positive. Hence, it appears that a positive team climate for innovation can help employees to make more sense of supervisor feedback.

From a methodological perspective, past research (e.g., Podsakoff et al., 2003) has advised researchers to consider the use of supervisor-ratings as a means to reduce common method bias. Although we endorse these suggestions, our finding that self- and supervisor-ratings of innovative performance tend to show low agreement may point to the relevance of also including self-ratings in study designs. Differential findings for self- and supervisor-ratings can possibly open up new research questions and insights into how innovative performance is perceived in organizations.

From a practical perspective, the results of this study inform managers that employees tend to overestimate their innovative performance, especially in a less supportive feedback environment or in a less positive team innovation climate (see also Janssen & van der Vegt, 2011). When evaluating innovative performance of subordinates, supervisors thus must be aware of the fact that their evaluation may differ strongly from the self-perceptions of the employee. Not being aware of the possible difference in perceptions might lead to negative outcomes of the evaluation process. For example, employees may not accept the feedback message or disengage from the innovation process altogether.

Our results also point towards the importance of social interactions between employees and their supervisor. Supervisors should aim to create frequent opportunities for feedback interactions with subordinates, and try to stimulate proactive feedback-seeking behavior among subordinates. Feedback-seeking behavior can not only aid the adaptation of employees' self-perceptions, but it also can provide access to new perspectives and information, and thus enhance employees' innovative performance in general (De Stobbeleir, Ashford, & Buyens, 2011). Finally, supervisors should pay attention to team climate for innovation, and try to create an environment where it is safe for team members to share and discuss innovative ideas.

Limitations and Directions for Future Research

Although our study has several strengths, it is not without limitations. First, while our data were collected over two points in time, they were collected from only one organization. This may have contributed to the internal validity of our study, but at the expense of the external validity. In addition, the sample size

was relatively small. Future research should aim to replicate and extend our results with larger samples and data from a more diverse set of organizations. The sample size also limited the set of viable options for our analytical approach. Although we opted to use a difference scores approach, we are aware that this approach has its limitations (Edwards, 1995). Our analytical approach does not allow for conclusions about the role of self-ratings relative to supervisor ratings. The difference score approach allows for conclusions about the overall size of the agreement, not about the specific role of the components.

Second, although we proposed the self-enhancement motive as the mechanism through which feedback environment and team climate for innovation can enhance agreement, we did not explicitly test this mechanism. This is not uncommon in self-motives research. Self-motives tend to be difficult to measure and they are often inferred only indirectly from experimental manipulations (Sedikides & Strube, 1997). Researchers have only very recently begun to develop and validate scales to measure self-motives in an appropriate way (Cable & Kay, 2012; Gregg, Hepper, & Sedikides, 2011). While the present study has provided theoretical arguments regarding the role of self-enhancement motives, future research should develop and integrate measures of the self-enhancement motive to provide closure on whether agreement is indeed influenced through this mechanism. We also acknowledge that self-enhancement is one possible explanation for self-supervisor agreement. Future research should test whether other alternative mechanisms mediate the impact of antecedent conditions on self-supervisor agreement.

Finally, we have argued that self-supervisor agreement can be beneficial for the innovation process. However, under certain conditions, it might be less appropriate for employees to adopt others' views and make changes accordingly, especially when it comes to highly original ideas. Recent research suggests that people might have a bias against original ideas, because people want to reduce the uncertainty that often characterizes original ideas (Mueller, Melwani, & Goncalo, 2012). Conceptual work on creative deviance (Mainemelis, 2010) has also indicated that some employees might continue working on a creative idea, even though their supervisor disagrees. Future

research should investigate whether and when higher self-supervisor agreement benefits innovative performance over time, extending research from antecedents of agreement on innovative performance to its outcomes.

CONCLUSION

The results of this study indicate that agreement between self- and supervisor-ratings of innovative performance tends to be low to moderate and that most employees overestimate their innovative performance compared to the rating of their supervisor. These results are in line with predictions from self-enhancement theory. Our results also point out that social factors, such as feedback environment and team climate for innovation, play a role in promoting higher agreement. In sum, this study provides an important first step in elucidating the social factors that may explain (dis)agreement and provides the groundwork for future studies to come to a more complete understanding of self-supervisor agreement of innovative performance.

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FOOTNOTE

[1]: This ambiguity is also present among academic researchers, who have only recently begun to refine the criterion space of creativity and innovative performance (Montag, Maertz, & Baer, 2012).

[2]: All adapted items are available from the authors.

3: In the last decade, multivariate regression has evolved as an alternative approach to explain components from which difference scores are derived. This approach allows researchers to examine differential effects of individual predictor variables on both components of the difference score, while testing multivariate hypotheses stating that a specific predictor has an identical effect on both components (Judge, LePine, & Rich, 2006). Thus, we also conducted the more common multivariate regression analysis. This analysis supported the relevance of the hypothesized predictor variables for both components involved in the difference score. In addition, the multivariate regression attested to a stronger (positive) role of team climate for innovation in predicting self-ratings of innovative performance than supervisor-ratings of innovative performance (i.e., a differential impact). However, due to the relative small sample size used in our study (favoring less complex statistical models) and our focal interest in the actual agreement between self- and supervisor ratings, we reported the results of the difference score analysis.

CHAPTER 5

GENERAL DISCUSSION

ABSTRACT

In three empirical chapters, the role of feedback in creativity, innovation, and entrepreneurship was examined. This final chapter starts with a brief summary of the empirical findings of this dissertation and an outline of the common thread of the chapters. In the second part, the broader theoretical implications of the findings are articulated and a tentative interactionist model of feedback and creativity, innovation, and entrepreneurship is presented. The third part outlines the strengths and limitations of this dissertation and provides directions for future research.

RESEARCH OVERVIEW

This section briefly summarizes the main findings of the three empirical chapters. It concludes with a description of the common thread that has emerged throughout this dissertation.

Maintaining Entrepreneurial Passion

In Chapter 2, the equivocal perspectives regarding the dynamic nature of entrepreneurial passion were addressed. Specifically, it was shown that while entrepreneurs' intense positive feelings of passion in the founding phase tend to decrease, identity centrality tends to be stable. Furthermore, Chapter 2 built on the job demands-resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) to show that entrepreneurs in the founding stage are confronted with increasing levels of role ambiguity and that increasing role ambiguity leads to stronger declines in intense positive feelings of passion, unless entrepreneurs proactively seek feedback from external sources. Finally, Chapter 2 added to the importance of studying entrepreneurial passion by showing that high passion motivates entrepreneurs to obtain patents, copyrights, or trademarks.

Improving Creative Performance

In Chapter 3, it was argued that employees who seek feedback from a diverse set of sources are likely to receive diverse (and even conflicting) feedback messages, especially when seeking feedback on creative ideas. In addition, on the basis of findings in the social networks literature, it was proposed that although there is potential value in seeking feedback from a large and diverse network, these networks also carry costs. Hence, Chapter 3 aimed to uncover the moderating conditions under which diverse feedback seeking would lead to higher creative performance. Building on lay epistemic theory (Kruglanski, 1989) and recent insights on prosocial motivation (Grant & Berry, 2011), it was shown that creative time pressure and charismatic-transformational leadership can act as moderators of the feedback seeking-creative performance relationship. Results indicated that diverse feedback seeking can lead to higher creative performance under low creative time pressure and high charismatic-transformational leadership, and that the moderating effect of charismatic-

transformational leadership is mediated through followers' other-orientation. Surprisingly, it was also found that diverse feedback seeking can lead to higher creative performance under high creative time pressure and low charismatic-transformational leadership.

Enhancing Self-Supervisor Agreement

Chapter 4 has built on self-enhancement theory (Sedikides & Gregg, 2008) to examine feedback environment and team climate for innovation as two social context factors that explain under what circumstances higher self-supervisor agreement of innovative performance can be achieved. The results were in line with the self-enhancement perspective, as they showed that employees tend to overestimate their innovative performance compared to the rating of their supervisor. In addition, it was argued that a supportive feedback environment and a strong team climate for innovation could complement each other to reduce the ambiguity regarding the behavioral norms and criteria for innovation, and to mitigate the self-enhancement strivings of employees. In line with this reasoning, it was found that a supportive feedback environment is more strongly associated with self-supervisor agreement when there is a positive team climate for innovation.

Summary

One common thread has emerged throughout this dissertation. Specifically, feedback did not have a significant main effect on the outcomes under study in any of the chapters. In other words, feedback was only found to impact the outcomes in interaction with other variables. This finding underscores the importance of an interactionist approach to the study of feedback and feedback-seeking behavior. In the next section, this interactionist approach and the broader theoretical implications of the three chapters are discussed in more detail.

THEORETICAL IMPLICATIONS

Because providing feedback is seen as one of the most accepted and applied interventions to stimulate employee learning, motivation, and performance (Anseel, 2003), feedback continues to spur interest among

researchers and practitioners. As such, it is important to understand the conditions under which feedback interventions lead to creative, innovative, and entrepreneurial outcomes. The findings in this dissertation consistently indicate that providing or seeking feedback is not enough to drive creative, innovative, and entrepreneurial outcomes. In Chapter 2, feedback-seeking behavior did not have a significant direct influence on the slope of intense positive feelings of passion. In Chapter 3, diverse feedback seeking did not have a significant direct influence on creative performance, and in Chapter 4, feedback environment did not have a significant direct influence on self-supervisor agreement of innovative performance. Together, these findings suggest that feedback will only lead to creative, innovative, and entrepreneurial outcomes under certain conditions. This insight underscores the importance of an interactionist approach to feedback and feedback-seeking behavior in organizations.

An Interactionist Model of Feedback and Creativity, Innovation, and Entrepreneurship

The interactionist model of feedback, presented in Figure 1, rests on the findings of this dissertation and on previous theorizing. Specifically, this tentative model builds on Woodman, Sawyer, and Griffin's (1993) interactionist model of organizational creativity to propose the interaction between personal and contextual factors as predictors of creative, innovative, and entrepreneurial outcomes. In addition, the model builds on Zhou's (2008) model of feedback and creativity to argue that there are interactions between different characteristics of feedback (e.g., the feedback sign, style, and feedback source) and that feedback impacts creativity, innovation, and entrepreneurship through specific mechanisms. It is not the aim of this model to provide an exhaustive list of the factors that can impact creative, innovative, and entrepreneurial outcomes. Rather, the finality of this model is to present a framework for organizing the main insights from this dissertation and to suggest key areas for future research. The underlying principle of this interactionist model is that feedback is a contextual factor that can interact with personal and other contextual factors to impact creative, innovative, and entrepreneurial outcomes through cognitive, motivational, and affective mechanisms.

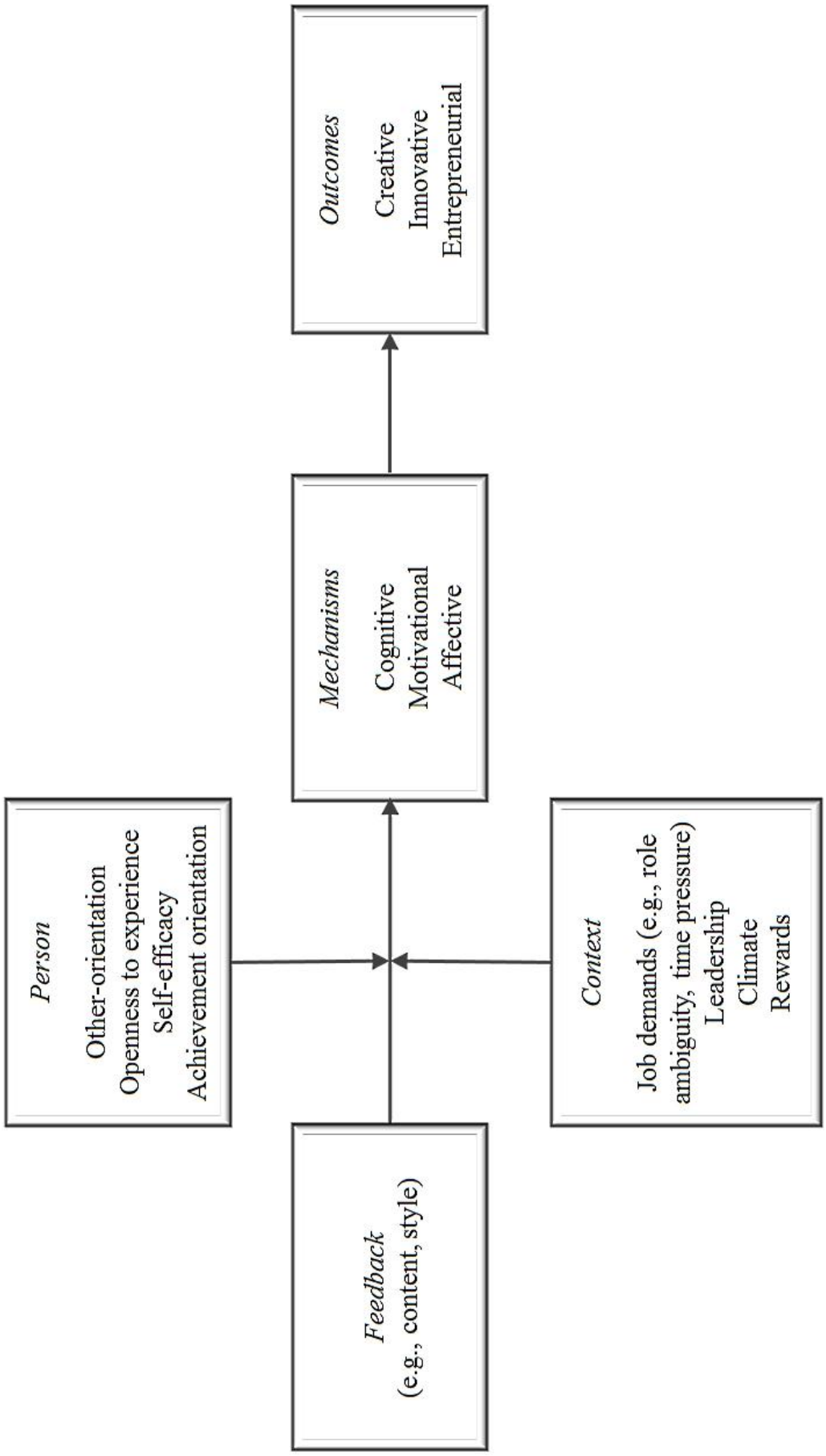

Figure 1. An interactionist model of feedback and creativity, innovation, and entrepreneurship.

Antecedents. In the interactionist model (Figure 1), feedback is seen as a contextual factor that can interact with personal factors as well as other contextual factors. Personal factors include, but are not limited to, other-orientation (Chapter 3), openness to experience, self-efficacy, and achievement orientation. Contextual factors include, but are not limited to, job demands (e.g., role ambiguity, Chapter 2; time pressure, Chapter 3), leadership (e.g., charismatic-transformational leadership style, Chapter 3), rewards (e.g., financial incentives for the suggestion of ideas), and the broader team or organizational climate (e.g., team climate for innovation, Chapter 4).

We first illustrate how feedback can interact with personal factors. For example, Chapter 3 showed that diverse feedback seeking interacted with employees' other-orientation (i.e., a personal factor) and time pressure to predict creative performance. Another example of how personal factors interact with contextual factors to predict creative outcomes can be found in a study by George and Zhou (2001). They found that feedback valence (i.e., positive or negative) interacted with openness to experience and task type. Specifically, George and Zhou found that positive feedback led to the highest creative performance when employees were high in openness to experience and worked on a heuristic task (i.e., a task with unclear means or ends).

Next, we illustrate how feedback can interact with other contextual factors. For example, Chapter 2 showed that feedback-seeking behavior interacted with role ambiguity (i.e., a job demand) to predict changes in entrepreneurial passion over time. Chapter 3 showed that diverse feedback seeking interacted with charismatic-transformational leadership and creative time pressure to predict creative performance. In another study on feedback and creative performance, Zhou (1998) showed that feedback valence (i.e., positive or negative) interacted with feedback style (i.e., informational or controlling) and task autonomy. Specifically, using an experimental design, she found that participants achieved the highest creative performance when they received positive feedback in an informational style and were given autonomy in how to proceed through the task. Finally, Chapter 4 showed that a supportive feedback

environment interacts with a positive team climate for innovation to predict self-supervisor agreement of innovative performance.

In sum, this dissertation shows that feedback can interact with personal as well as contextual factors to predict creative, innovative, and innovative outcomes. Regarding personal moderating factors, current research points toward the relevance of other-orientation (Chapter 3) and openness to experience (George & Zhou, 2001). Such personal factors can moderate the effect of feedback on creative, innovative, and entrepreneurial outcomes, for example by stimulating employees to attend more to feedback received from others and to process the feedback more thoroughly. Future research can examine other personal factors such as self-efficacy (e.g., Brown, Ganesan, & Challagalla, 2001) and achievement orientation (e.g., Anseel, Van Yperen, Janssen, & Duyck, 2011) as potential moderators influencing how feedback is processed in light of creative, innovative, and entrepreneurial outcomes.

Regarding contextual moderating factors, Chapters 2-4 pointed toward the relevance of job demands (e.g., role ambiguity and time pressure), leadership style, and team climate. For example, feedback can be a valuable resource when employees experience high job demands (Demerouti et al., 2001). In addition, leadership style and team climate might provide employees with the needed support and behavioral examples to effectively deal with (negative) feedback. Future research can investigate the moderating role of other contextual factors, such as rewards for creativity. For example, researchers can examine whether rewards for creativity increase the value of feedback as a means for goal achievement (i.e., obtaining the reward).

Mechanisms. In the general introduction of this dissertation, the antecedents of creativity were divided into three categories: cognitive, motivational, and affective (Zhou & Shalley, 2010). Here, these categories are considered as three possible mechanisms through which feedback, in interaction with personal and other contextual factors, can impact creative, innovative, and entrepreneurial outcomes.

First, cognitive mechanisms include understanding the organizational criteria used to evaluate ideas, viewing a problem from different perspectives,

and developing one's domain-specific knowledge (Amabile, 1996). When employees receive feedback on ideas, feedback can have an impact on these cognitive mechanisms (Zhou, 2008). For example, it was argued in this dissertation that diverse feedback seeking will provide access to new and non-redundant perspectives on an idea (Chapter 3) and that a supportive feedback environment could aid employees in learning about the evaluative criteria for innovation used in their organization (Chapter 4). Second, motivational mechanisms include experiencing genuine interest and curiosity in a task (i.e., intrinsic motivation). Positive feedback given in an informational style has been proposed to impact the intrinsic motivation for a task (Zhou, 1998, 2008). In a way, Chapter 2 investigated the motivational effects of feedback-seeking behavior by looking at entrepreneurial passion, which has been posited to motivate entrepreneurs to overcome barriers (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005). Third, affective mechanisms include the role that moods play in creativity (e.g., Baas, De Dreu, & Nijstad, 2008; Bledow, Rosing, & Frese, 2013). Past research has argued that feedback can invoke strong affective reactions (Kluger, Lewinsohn, & Aiello, 1994; Zhou, 2008), and feedback reactions are often operationalized using affective constructs, such as negative and positive affect (e.g., Atwater & Brett, 2005; Feys, Anseel, & Wille, 2011). In a way, Chapter 2 measured a possible affective mechanism by focusing on entrepreneurs' intense positive feelings of passion.

In sum, Figure 1 proposes three possible mechanisms linking feedback to creativity, innovation, and entrepreneurship. To date, virtually no studies have empirically examined the mechanisms linking feedback and feedback-seeking behavior to these types of outcomes. Thus, the box describing the mechanisms in Figure 1 represents a 'black box' between feedback (or feedback-seeking behavior) and outcomes of feedback (Crommelinck & Anseel, 2013). This critique or this 'black box' also holds for the literatures on creativity, innovation, and entrepreneurship in general. In these literatures, it is seldom that mechanisms linking personal or contextual antecedents to creative, innovative, and entrepreneurial outcomes are empirically verified. In addition, these studies typically measure only one mechanism (Atwater & Carmeli, 2009), which leaves questions about how the three mechanisms interact. Although Figure 1

can aid future research by delineating potential mechanisms between feedback and its outcomes, a full theoretical account of the interplay between the three mechanisms falls beyond the scope of this discussion. Future research examining the three mechanisms can help to gradually refine theory on how feedback leads to creative, innovative, and entrepreneurial outcomes.

Outcomes. Figure 1 indicates that feedback can impact different creative, innovative, and entrepreneurial outcomes. For example, in Chapter 3, it was found that diverse feedback seeking interacted with charismatic-transformational leadership and creative time pressure to predict creative performance. This dissertation also investigates other outcomes, such as self-supervisor agreement of innovative performance and whether entrepreneurs have sought to obtain patents, trademarks or copyrights.

One avenue that might be particularly relevant for future research concerns the role of feedback throughout the process from initial idea to realized product, service, or venture. Indeed, there are differences between creativity, innovation, and entrepreneurship. While creativity is mostly about idea creation, innovation and entrepreneurship are also about idea implementation. It is possible that different types of feedback (e.g., supportive versus more critical feedback) are needed in various phases of the innovation process (e.g., idea creation versus idea implementation), and that personal and contextual factors will interact in different ways to predict idea creation versus idea implementation (Baer, 2012). Although not focusing on actual feedback, Yuan and Zhou (2008) investigated the effect of expected evaluation (i.e., participants expecting their ideas to be evaluated by external evaluators) on different phases of the innovative process (i.e., idea generation and idea selection). Yuan and Zhou found that, during idea generation, individuals who expected evaluation generated fewer ideas. However, during idea selection, individuals who expected evaluation actually did a better job at selecting ideas and improving the appropriateness of the ideas. These findings indicate that various types of feedback may have differential effects on different phases of the innovation process. For example, positive feedback might aid idea generation by enhancing divergent thinking, intrinsic motivation, and instilling a positive, activating

mood (e.g., happiness). In contrast, negative feedback might aid idea selection by enhancing convergent, critical thinking and instilling a negative, activating mood (e.g., anger). In addition, personal factors such as self-efficacy might influence how the feedback is interpreted and thus moderate the influence of feedback valence on cognition, motivation, and affect.

Conclusion. The interactionist model (Figure 1) has built on Woodman, Sawyer, and Griffin's model of organizational creativity and on Zhou's model of feedback and creativity. The interactionist model also resonates with the entrepreneurship literature, where researchers have moved from studying only the entrepreneur to studying the nexus, or the interaction, between the entrepreneur and the opportunity (Shane, 2012; Shane & Venkataraman, 2000). In the next paragraphs, it is discussed how the interactionist model, as an organizing framework for this dissertation, might extend these models.

First, the model of Woodman, Sawyer, and Griffin (1993) proposed the interaction between personal and contextual factors as predictors of creative outcomes. The interactionist model described in this chapter goes beyond the model by Woodman et al. by proposing three potential mechanisms (i.e., cognitive, motivational, and affective) through which the interaction of personal and contextual factors impact creative outcomes. In addition, the interactionist model aimed to extend the outcomes under study to innovation and entrepreneurship. Second, the model by Zhou (2008) suggested that different aspects of feedback (i.e., the nature of feedback, characteristics of the feedback recipient, and characteristics of the feedback giver) interact to predict creative outcomes through a number of cognitive and motivational mechanisms. The interactionist model in this chapter extends Zhou's model by proposing several contextual factors (e.g., time pressure) that might influence how and when feedback impacts creative outcomes. The interactionist model also extended the mechanisms to include not only cognitive and motivational processes, but also affective processes. In addition, the model in this chapter aimed to extend the outcomes under study to innovation and entrepreneurship. Finally, the interactionist model extends the individual-opportunity nexus model (Shane, 2012; Shane & Venkataraman, 2000) by proposing three mechanisms through

which personal and contextual antecedents influence entrepreneurial outcomes, and it also extends the nexus model to include creativity and innovation as outcomes.

The discussion of the interactionist model of feedback and creativity, innovation, and entrepreneurship also suggested several avenues for future research. First, researchers can examine new personal and contextual factors (e.g., self-efficacy, achievement orientation, and rewards for creativity) that moderate the relationship between feedback and creative, innovative, and entrepreneurial outcomes. A second avenue for future research that might even be the most pressing for researchers lies in testing the mechanisms that explain how feedback impacts creative, innovative, and entrepreneurial outcomes. As such, future research can gradually refine theory on the interplay between cognitive, motivational, and affective mechanisms in the prediction of creativity, innovation, and entrepreneurship. Third, researchers can investigate the role of feedback in different phases of the innovation process. For example, it was proposed that feedback valence (i.e., positive or negative) might interact with self-efficacy to differentially impact idea generation and idea implementation via cognitive, motivational, and affective mechanisms.

STRENGTHS, LIMITATIONS, AND DIRECTIONS FOR FUTURE RESEARCH

Strengths

First, in line with the interactionist approach to feedback, each of the chapters in this dissertation developed interaction models. In Chapter 2, entrepreneurial passion was predicted by the interaction of feedback-seeking behavior and changes in role ambiguity over time. In Chapter 3, it was shown that creative time pressure as well as charismatic-transformational leadership need to be considered for understanding the effect of diverse feedback seeking on creative performance. Finally, in Chapter 4, self-supervisor agreement was predicted by the interaction of feedback environment and team climate for innovation.

Second, this dissertation hosts a variety of outcomes, theoretical perspectives, samples, and methods. The outcomes under study include entrepreneurial passion (Chapter 2), creative performance (Chapter 3), and self-supervisor agreement of innovative performance (Chapter 4). The theoretical perspectives used in this dissertation are the job demands-resources model (Chapter 2; Demerouti et al., 2001), lay epistemic theory (Chapter 3; Kruglanski, 1989), theory on prosocial motivation (Chapter 3; Grant & Berry, 2011), and self-enhancement theory (Chapter 4; Sedikides & Gregg, 2008). The research questions were also answered in a variety of samples, such as startup entrepreneurs (Chapter 2), hospital employees (Chapter 3), and Research & Development professionals (Chapter 4). Finally, a variety of methods was used, such as a longitudinal design (Chapter 2), a social network measure (Chapter 3), and the use of other-ratings such as the supervisor (Chapters 3 and 4).

Third and finally, this dissertation started from the literature on feedback and feedback-seeking behavior but tried to extend this literature to other literatures. For example, Chapter 2 aimed to introduce feedback-seeking behavior to the entrepreneurship literature. Chapter 3 aimed to take a step toward an integration of the literature on feedback-seeking behavior with the social networks literature. Finally, Chapter 4 aimed to investigate the impact of feedback environment on self-supervisor agreement.

Limitations and Directions for Future Research

Although this dissertation has several strengths, there are also important limitations that hold across the three chapters. First, this dissertation relied exclusively on survey research. Although several approaches to survey research were used (e.g., a longitudinal design and a social networks measure), there is certainly room for more experimental research on feedback and creative, innovative, and entrepreneurial outcomes. Results from survey research may be confounded by the influence of other personal and contextual factors in the field. This limitation is even more relevant in the light of an interactionist approach, where interactions between personal and contextual factors play a central role. Experimental designs would allow to study moderators of feedback in a more controlled setting.

Second, the content of the feedback that was received by employees and entrepreneurs was not measured in this dissertation. Past research has documented that content of the feedback (e.g., whether the feedback is positive or negative) that is sought or received can have an important influence on employee effectiveness and creativity (Ashford & Tsui, 1991; Zhou, 1998). Also, when measuring the content of the feedback, future research can infer the informational value of certain feedback messages. Currently, the informational value of feedback is often inferred indirectly (e.g., De Stobbeleir, Ashford, & Buyens, 2011). This is also a limitation of this dissertation (Chapter 3).

Third, the mechanisms that link feedback and feedback-seeking behavior to creative, innovative, and entrepreneurial outcomes have not been tested in each chapter. In the interactionist model, cognitive, motivational, and affective mechanisms are presented. Only in Chapter 2 attention was paid to a potential affective-motivational mechanism, namely entrepreneurial passion. As discussed in the previous section, future research is needed that investigates how distinct feedback messages impact the cognitive, motivational, and affective mechanisms that lead to creativity, innovation, and entrepreneurship. Hence, the 'black box' between feedback and creative, innovative, and entrepreneurial outcomes can gradually be opened.

Fourth, the outcomes of this dissertation were limited to creativity, innovation, and entrepreneurship. Because these outcomes where never directly compared to other performance outcomes, this dissertation provides no firm indication of whether the interactionist approach would also be useful for studying other outcomes. For example, Chapter 3 focused on diverse feedback seeking in the context of creative performance but not in the context of in-role performance. Future research should test the generalizability of these findings, for example by considering task type as a moderator (e.g., Van Dijk & Kluger, 2011).

Fifth, in this dissertation, feedback was portrayed as *social*. Alternatively, *task* feedback might also be relevant for creativity, innovation, and entrepreneurship (Grant & Ashford, 2008). For example, consider an entrepreneur working on a new idea for a venture. The entrepreneur can devise

tests and experiments to find out about the technical feasibility of the idea in an objective way. Essentially, the lean startup methodology for entrepreneurs (Chapter 2) builds further on this principle. In sum, entrepreneurs, employees, and managers can potentially enhance the value of feedback by focusing not only on social feedback but also on task feedback. Future research can investigate how and when social and task feedback can complement each other to aid creativity, innovation, and entrepreneurship.

PRACTICAL IMPLICATIONS

The findings of this dissertation point to the complexity of the relationship between feedback and creativity, innovation, and entrepreneurship. To organize these findings in a general framework, a tentative interactionist model was presented. An implication of the results of this dissertation is that it might be fruitful to couple advice on seeking or providing feedback with advice on creating the right conditions that allow individuals to benefit from feedback. Therefore, the practical implications of this dissertation do not provide quick fix solutions. The practical implications, targeted at employees, managers, and entrepreneurs, are based on the empirical chapters of this dissertation and on a review of the literature on feedback-seeking behavior by Crommelinck and Anseel (2013).

For employees

- Large and diverse feedback networks often come at a cost (Chapter 3). Not only do these networks require time, attention, and energy to establish and maintain, several conditions need to be present before employees can benefit from large and diverse feedback networks (e.g., working under a charismatic-transformational leader and experiencing low creative time pressure). Therefore, employees and organizations should reflect on whether the right conditions are present to benefit from large and diverse networks, before employees put effort in expanding their network.
- They say that the necessity of others is the mother of invention (Grant & Berry, 2011). Being focused on others can indeed benefit employees' creative performance when they seek diverse feedback and experience low creative time pressure (Chapter 3). However, when employees seek

diverse feedback and when they experience high levels of time pressure, it might pay off to be less other-oriented (Chapter 3).

- Although 'being in love' with an idea can provide employees with the necessary motivation and passion to pursue that idea, it can also have a downside. Indeed, most employees tend to overestimate their own innovative performance compared to the rating of their supervisor (Chapter 4). Employees should try to maintain a modest approach to their own ideas, for example by remaining open to feedback from their supervisor and by attending to the innovative performance of other team members (Chapter 4).

For managers

- Managers can create a supportive feedback environment by being credible, providing high-quality feedback, delivering feedback clearly and empathetically, delivering both positive and negative feedback when necessary, being accessible, and actively promoting feedback-seeking behavior among subordinates (Chapter 3; Steelman, Levy, & Snell, 2004). Organizations can train managers in different strategies for encouraging feedback seeking (e.g., by showing consideration and by concealing a bad mood) (Crommelinck & Anseel, 2013).
- Managers play a role in creating the right context for employees to benefit from diverse feedback seeking. Specifically, by adopting a charismatic-transformational leadership style *and* by lowering creative time pressure for subordinates, managers can increase the likelihood that diverse feedback seeking will enhance employees' creative performance (Chapter 3).
- When evaluating subordinates, managers should be aware that most employees tend to overestimate their own innovative performance (Chapter 4). Not being aware of the possible difference in performance perceptions might lead to negative outcomes of the evaluation process. For example, employees may not accept the feedback message or disengage from the innovation process altogether.

For entrepreneurs

- Entrepreneurship education can stimulate entrepreneurs to get out of the building and seek feedback from customers on the key assumptions underlying their business idea (Chapter 2). Universities can also design training programs in order to develop the learning goal orientations of entrepreneurs and entrepreneurial students (e.g., by changing their attributions about success and failure), because learning goal orientations are associated with more feedback-seeking behavior (Crommelinck & Anseel, 2013). Entrepreneurship networks can also design regular feedback sessions to answer to the feedback needs of startup entrepreneurs.
- For startup entrepreneurs, experiencing role ambiguity is a part of the founding phase and this experience can deplete entrepreneurs' energy levels (Chapter 2). Unfortunately for entrepreneurs, role ambiguity is likely to increase during the founding phase. Entrepreneurs should try to seek feedback proactively in order to cope with this increasing ambiguity.
- Entrepreneurial passion is the "fire in the belly" that makes entrepreneurs pursue their dreams. Entrepreneurs are advised to protect their passion as they go through the founding phase. A likely decrease in entrepreneurial passion tends to be triggered by increasing levels of role ambiguity and can be diminished by seeking feedback from external sources (Chapter 2).

CONCLUDING REMARKS

The general introduction of this dissertation started with a personal account of how feedback has helped me in achieving creative, innovative, and entrepreneurial outcomes. The first example indicated that seeking feedback proactively has helped me to refine an idea and to maintain my motivation to organize a job fair. Chapter 2 showed that feedback-seeking behavior can indeed help startup entrepreneurs to cope with role ambiguity and to maintain their passion levels over time. The second example explained that feedback on creative ideas can often be diverse, and that the right context is needed to benefit from diverse feedback. Chapter 3 showed that time pressure, charismatic-transformational leadership style, and other-orientation can interact to create

such a context. Finally, the third example illustrated how feedback from my advisors has aided me in maintaining a balanced self-view throughout the Ph.D. process. Chapter 4 indeed showed that a supportive feedback environment as set by the supervisor can help to achieve higher self-supervisor agreement of innovative performance, but it also pointed toward the importance of working in a positive team climate for innovation.

As such, this dissertation combined the paths of personal experience and empirical testing in field settings. The findings of this dissertation were organized within a tentative interactionist model of feedback and creativity, innovation, and entrepreneurship. Hopefully, this dissertation and the resulting interactionist model can provide stimuli for future research in this field and aid practitioners in capturing the complexity of the relationship between feedback and creative, innovative, and entrepreneurial outcomes.

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NEDERLANDSTALIGE SAMENVATTING

DE ROL VAN FEEDBACK IN CREATIVITEIT, INNOVATIE, EN ONDERNEMERSCHAP

INTRODUCTIE

Innovatie en ondernemerschap worden vaak aanzien als de motor van een economie. De basis van innovatie en ondernemerschap schuilt echter vaak in een creatief idee. In dit doctoraat wordt gefocust op de rol van feedback in creativiteit, innovatie en ondernemerschap. Feedback wordt voorgesteld als een belangrijke contextuele factor die niet enkel kan beïnvloeden hoe creatieve ideeën zich ontwikkelen, maar ook hoe deze ideeën worden vertaald in succesvolle innovaties en ondernemingen.

Feedback en Feedback-zoekend Gedrag

Onderzoekers zijn reeds langer dan 100 jaar geïnteresseerd in de effecten van feedback op gedrag en prestatie. De wonderjaren van feedbackonderzoek werden in 1956 samengevat in een review door Ammons. Deze review concludeerde dat feedback bijna universeel positieve effecten had op leren en motivatie. Feedback geven aan individuen werd dus stilaan aanzien als een van de meest aanvaarde en toegepaste psychologische interventies. In de jaren ’80 gingen er echter meer en meer stemmen op dat de relatie tussen feedback en prestatie complexer was dan vroeger werd aangenomen (Ilgen, Fisher, & Taylor, 1979). De groeiende kritiek op feedbackonderzoek resulteerde uiteindelijk in een systematische meta-analyse door Kluger en DeNisi (1996). Zij bestudeerden de effecten van feedbackinterventies (i.e., wanneer een externe partij, zoals een leidinggevende, informatie geeft over hoe iemand presteert op een taak) op prestatie. De meta-analyse bestond uit een kwantitatieve analyse van meer dan 600 *effect sizes* (i.e., geëvalueerde relaties) en observaties bij meer dan 20000 individuen. Op basis van deze meta-analyse concludeerden Kluger en DeNisi dat, hoewel feedback gemiddeld een positieve impact had op prestatie (Cohen’s d = .41), een derde van de feedbackinterventies een negatieve impact had op prestatie.

Als antwoord op de conflicterende resultaten van sommige feedbackstudies, formuleerden Ashford en collega’s het concept feedback-zoekend gedrag (Ashford & Cummings, 1983). Ashford portretteerde organisaties als feedbackrijke omgevingen waarin medewerkers een actieve rol kunnen spelen in het feedbackproces door zelf proactief feedback te zoeken.

Feedback-zoekend gedrag kan individuen helpen om zich aan te passen aan een nieuwe organisatie, om bij te leren, en om prestaties te verbeteren (Crommelinck & Anseel, 2013). Opnieuw temperde een meta-analyse het enthousiasme van onderzoekers over feedback-zoekend gedrag. Anseel, Lievens, Beattey, Shen, and Sackett (2013) toonden aan dat de relatie tussen feedback-zoekend gedrag en prestatie positief was, maar zwak (ρ = .07). Hun analyses wezen er bovendien op dat de relatie tussen feedback-zoekend gedrag en prestatie afhankelijk lijkt van moderatoren.

Samenvattend kan er gesteld worden dat zowel onderzoekers als HR-medewerkers snel aannemen dat feedback een krachtige en positieve interventie is om leren, motivatie en prestaties bij medewerkers te verbeteren. Verschillende meta-analyses verwerpen deze stelling echter. Het blijkt dat feedback en feedback-zoekend gedrag prestaties enkel zullen verbeteren onder bepaalde condities. Dit inzicht vormt dan ook de basis voor dit doctoraatsproefschrift.

Creativiteit, Innovatie, en Ondernemerschap

Creativiteit is essentieel voor de economische groei en sociale vooruitgang van een regio (Florida, 2004; Schumpeter, 1939), en wordt steeds meer aanzien als een belangrijke drijfveer voor de prestaties, groei en competitiviteit van organisaties (Amabile, 1996; Gong, Zhou, & Chang, 2013; Woodman, Sawyer, & Griffin, 1993; Zhou & Shalley, 2010). In dit doctoraatsproefschrift wordt gefocust op organisatiecreativiteit; dit betreft creativiteit binnen een werk- en organisatiecontext.

Hoewel psychologisch onderzoek naar creativiteit een lange historiek kent, is onderzoek naar organisatiecreativiteit relatief nieuw. Pas in de jaren ’80 begonnen onderzoekers organisatiecreativiteit actief te bestuderen. Teresa Amabile speelde hierin een belangrijke rol. Ten eerste stelde ze de veelgebruikte definitie voor van creativiteit als de productie van ideeën die zowel nieuw als nuttig zijn (Amabile, 1996). Ten tweede bouwde zij een componentenmodel van creativiteit en dit model stimuleert onderzoek tot op vandaag. Volgens het componentenmodel zijn er drie basiscomponenten van creativiteit: domeinrelevante kennis, creatieve vaardigheden en taakmotivatie (Amabile, 1988). Van deze drie componenten was de laatste de belangrijkste volgens

Amabile's model: om creatief te zijn dien je vooral intrinsiek gemotiveerd te zijn voor de taak die je uitvoert. Een andere theorie die belangrijk is in het licht van dit doctoraatsproefschrift is de interactionistische theorie van Woodman, Sawyer en Griffin (1993). Deze theorie stelt dat creativiteit een fenomeen is dat resulteert uit de interactie van persoonlijke en situationele factoren.

Er zijn verschillende voorspellers van creativiteit. In deze samenvatting wordt gebruik gemaakt van een opdeling door Zhou en Shalley (2010). Zij deelden de voorspellers van creativiteit in drie categorieën op: motivationele, cognitieve, en affectieve voorspellers. De eerste categorie betreft de motivationele voorspellers, en dit onderzoek vindt haar oorsprong in het componentenmodel van Amabile (Amabile, 1988, 1996). Onderzoeken naar motivationele voorspellers van creativiteit bestudeerden zelden intrinsieke motivatie per se, maar gebruiken het intrinsieke motivatie-perspectief om situationele factoren (zoals feedback, leiderschap, doelen of beloningen) te identificeren die creativiteit kunnen beïnvloeden via intrinsieke motivatie. Het is verrassend dat de studies die intrinsieke motivatie wél hebben gemeten conflicterende resultaten vonden. Amabile toonde bijvoorbeeld aan dat extrinsieke motivatoren (zoals financiële beloningen) creativiteit belemmeren omdat zij de intrinsieke motivatie verminderen (Amabile, 1996; Amabile & Gitomer, 1984). Eisenberger, echter, vond dat extrinsieke motivatoren creativiteit kunnen stimuleren (Eisenberger & Aselage, 2009; Eisenberger & Rhoades, 2001). Een recente studie van Grant en Berry (2011) heeft een stap gezet in het oplossen van deze inconsistente bevindingen. Zij toonden op basis van verscheidene studies aan dat de aard van het effect van intrinsieke motivatie op creativiteit afhangt van prosociale motivatie. Wanneer de prosociale motivatie van medewerkers hoog is (i.e., wanneer zij het welzijn van anderen willen vergroten) leidt intrinsieke motivatie tot meer creativiteit, maar niet wanneer prosociale motivatie laag is.

De cognitieve voorspellers van creativiteit vormen de tweede categorie. Deze voorspellers verwijzen onder andere naar de domeinrelevante kennis die medewerkers hebben en naar hun creatieve vaardigheden (Amabile, 1996). Recent onderzoek bracht verder aan het licht dat onbewuste processen ook een

invloed hebben op creativiteit. Er werd bijvoorbeeld aangetoond dat onbewuste gedachten (versus bewuste denkprocessen) tot meer divergent denken en tot meer originele ideeën leiden. Het incubatie-effect is ook een relevant effect om de aanwezigheid van onbewuste processen in creativiteit te duiden. Onderzoek toont aan dat incubatie (i.e., een tijdelijke verschuiving van de aandacht weg van het oorspronkelijke probleem) kan helpen om creatieve oplossingen te vinden voor problemen (Sio & Ormerod, 2009).

De derde categorie betreft de affectieve voorspellers van creativiteit. Affect is een algemene term die zowel stemmingen als emoties omvat (Zhou & Shalley, 2010). Meta-analytisch onderzoek toonde aan dat activerende stemmingen (bv., blijheid en boosheid) de creativiteit kunnen verhogen, onafhankelijk of deze stemmingen positief of negatief zijn (Baas, De Dreu, & Nijstad, 2008). Recent onderzoek bekeek ook de effecten van veranderingen in emoties. Bledow en collega's toonden aan dat affectieve verschuivingen (i.e., verschuivingen van negatief naar positief affect) gedurende een werkdag een positieve impact kunnen hebben op het engagement van medewerkers en hun creativiteit (Bledow, Rosing, & Frese, 2013; Bledow, Schmitt, Frese, & Kuhnel, 2011).

Creativiteit ligt aan de basis van innovatie en ondernemerschap. Innovatie kan gedefinieerd worden als het intentioneel introduceren en toepassen van ideeën die nieuw zijn voor een bepaalde adoptie-eenheid (zoals een team of organisatie) en die bedoeld zijn om een belangrijk voordeel op te leveren. Deze definitie wijst naar twee verschillen tussen creativiteit en innovatie. Ten eerste wordt creativiteit vaak aanzien als voorloper van innovatie. Innovatie omhelst daarbij immers niet alleen de introductie van ideeën, maar ook de realisatie ervan. Een tweede verschil is dat een idee niet per se uniek hoeft te zijn om innovatief te zijn. Zolang het nieuw is voor de adoptie-eenheid, mag men spreken over innovatie. In dit doctoraatsproefschrift wordt ook verwezen naar innovatieve prestatie. Onder innovatieve prestatie wordt het genereren, promoten, en implementeren van ideeën door medewerkers verstaan.

Ondernemerschap, tenslotte, wordt gedefinieerd als het identificeren, evalueren en exploiteren van opportuniteiten (Shane & Venkataraman, 2000). In

plaats van te focussen enkel op de ondernemer of op de opportuniteit, heeft recent onderzoek vooral aandacht voor de nexus, of interactie, tussen de ondernemer en de opportuniteit. Opportuniteiten zijn situaties waarin het mogelijk is om middelen op zo'n manier te recombineren dat er winst wordt gemaakt (Shane, 2012). In dit recombinatieproces, gestuwd vanuit de creativiteit van de ondernemer, worden nieuwe bedrijfsideeën gevormd.

De Rol van Feedback in Creativiteit, Innovatie en Ondernemerschap

Voorgaand onderzoek heeft waardevolle inzichten opgeleverd over de rol van feedback in het stimuleren van creativiteit bij medewerkers. Deze studies, vooral gedreven door Zhou en collega's (George & Zhou, 2001; Zhou, 1998, 2003; Zhou & George, 2001), suggereren dat positieve feedback de creativiteit kan stimuleren en dat feedback dient gegeven te worden in een informationele stijl of met een ontwikkelingsgerichte boodschap. Op die manier kan feedback medewerkers motiveren om een idee verder te verbeteren, of kan feedback toegang geven tot nieuwe perspectieven die een idee kunnen verrijken.

Net als met de relatie tussen feedback en prestatie (cf. supra) is de relatie tussen feedback en creativiteit evenmin eenduidig. Bijvoorbeeld, terwijl Zhou (1998) vond dat positieve (maar niet negatieve) feedback creativiteit promoot, vonden Akinola en Mendes (2008) dat negatieve feedback geassocieerd was met hogere creativiteit op artistieke taken. De relatie tussen feedback-zoekend gedrag en creativiteit is evenmin eenduidig. Terwijl De Stobbeleir, Ashford en Buyens (2011) toonden dat feedback zoeken bij een diverse set van bronnen geassocieerd is met hogere creatieve prestaties, suggereert onderzoek naar sociale netwerken dat feedback zoeken bij een groot en divers netwerk ook kosten met zich meebrengt die creatieve prestaties in de weg kunnen staan (Nahapiet & Ghoshal, 1998). In tegenstelling met de relatief goed ontwikkelde literatuur rond feedback en creativiteit, is onderzoek naar de impact van feedback op innovatie en ondernemerschap vrijwel onbestaand. Dit onderzoek lijkt echter dringend nodig, gezien innovatie en ondernemerschap vaak gezien worden als feedback-gedreven processen (Bhave, 1994).

In lijn met de vaak inconsistente resultaten aangaande feedback en prestatie enerzijds, en feedback en creativiteit anderzijds, werden in dit

doctoraatsproefschrift drie empirische studies opgezet vanuit een interactionistische benadering op feedback en creativiteit, innovatie en ondernemerschap. Specifiek werd er vanuit deze interactionistische benadering nagegaan wat de mogelijke factoren (i.e., modererende condities) zijn die bepalen wanneer feedback en feedback-zoekend gedrag een gunstige impact hebben op creativiteit, innovatie, en ondernemerschap, en wanneer niet.

STUDIES IN DIT DOCTORAATSPROEFSCHRIFT

Feedback-Zoekend Gedrag en Ondernemerschapspassie

Het eerste empirische hoofdstuk (Hoofdstuk 2) ging dieper in op de tegengestelde perspectieven in de literatuur rond ondernemerschapspassie. Terwijl sommige studies beargumenteerden dat passie relatief stabiel is (Cardon, Gregoire, Stevens, & Patel, 2013; Cardon, Wincent, Singh, & Drnovsek, 2009), toonden andere studies aan dat affectieve constructen zoals passie dynamisch zijn en dat ze beïnvloed kunnen worden door gebeurtenissen in de omgeving (Weiss & Cropanzano, 1996). In dit hoofdstuk werd aangetoond dat één component van ondernemerschapspassie (i.e., intense positieve gevoelens van passie) daalt tijdens de stichtingsfase van een onderneming, terwijl de andere component van ondernemerschapspassie (i.e., identiteitscentraliteit) een stabiel patroon vertoont. Verder bouwde dit hoofdstuk voort op het *job demands-resources model* (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) om aan te tonen dat ondernemers in de stichtingsfase geconfronteerd worden met steeds stijgende niveaus van rolambiguïteit (i.e., een vorm van onzekerheid) en dat stijgende rolambiguïteit tot sterkere dalingen in passie leidt, tenzij ondernemers proactief feedback zoeken. Feedback is dus een belangrijke hulpbron voor ondernemers en bovendien kan feedback dienen als buffer tegen een stijgende rolambiguïteit. Tenslotte droeg dit hoofdstuk ook bij aan de literatuur rond ondernemerschapspassie door aan te tonen dat sterke passiegevoelens ondernemers motiveren om patenten, handelsmerken, of copyrights aan te vragen.

Diverse Feedback en Creatieve Prestatie

In het tweede empirische hoofdstuk (Hoofdstuk 3) werd beargumenteerd dat medewerkers vaak feedback zoeken van heel diverse feedbackbronnen, en dit zowel binnen als buiten hun organisatie. Het kan bovendien verwacht worden dat medewerkers diverse feedback zullen ontvangen wanneer ze bij verschillende bronnen feedback zoeken en zeker wanneer ze feedback zoeken over creatieve ideeën. Bouwend op *lay epistemic theory* (Kruglanski, 1989) en recente inzichten in prosociale motivatie (Grant & Berry, 2011), werd voorspeld dat tijdsdruk en charismatisch-transformationeel leiderschap de relatie tussen divers feedback-zoekend gedrag en creatieve prestatie kunnen modereren. De resultaten toonden aan dat divers feedback-zoekend gedrag kan leiden tot hogere creatieve prestatie onder lage tijdsdruk en hoog charismatisch-transformationeel leiderschap. Bovendien werd gevonden dat het modererende effect van charismatisch-transformationeel leiderschap werd gemedieerd door prosociale oriëntatie bij volgers. Een verrassend resultaat was dat divers feedback-zoekend gedrag ook kan leiden tot hogere creatieve prestatie onder hoge tijdsdruk en laag charismatisch-transformationeel leiderschap.

Feedbackomgeving en Beoordelingen van Innovatieve Prestatie

Tenslotte werd in het derde empirische hoofdstuk (Hoofdstuk 4) verder gebouwd op *self-enhancement theory* (Sedikides & Gregg, 2008). Op die manier werd in dit hoofdstuk getracht om te verklaren wanneer grotere overeenstemming tussen zelfbeoordelingen en leidinggevende-beoordelingen (i.e., beoordelingen van een medewerker door een leidinggevende) van innovatieve prestatie kan bereikt worden. Via de *self-enhancement theory* werden twee factoren uit de sociale context van medewerkers onderzocht, namelijk feedbackomgeving en teamklimaat voor innovatie. De resultaten lagen in lijn met het *self-enhancement*-perspectief aangezien ze toonden dat medewerkers hun innovatieve prestatie neigden te overschatten ten opzichte van de beoordeling van hun leidinggevende. Bovendien werd beargumenteerd dat feedbackomgeving en teamklimaat voor innovatie complementair kunnen werken om de ambiguïteit aangaande de gedragsnormen en evaluatiecriteria voor innovatie te verminderen, en om *self-enhancement*-motieven van

medewerkers te verzwakken. In lijn met deze redenering werd gevonden dat een ondersteunende feedbackomgeving geassocieerd is met een grotere overeenkomst tussen zelfbeoordelingen en leidinggevende-beoordelingen wanneer medewerkers werken in een positief teamklimaat voor innovatie dan wanneer het teamklimaat minder positief is.

ALGEMENE CONCLUSIE

Dit doctoraatsproefschrift wordt gekenmerkt door een variëteit aan uitkomsten, theoretische benaderingen, en steekproeven. Eén rode draad is echter merkbaar. Doorheen de hoofdstukken had feedback immers geen significant hoofdeffect op de bestudeerde uitkomsten; feedback had enkel een impact op de bestudeerde uitkomsten in interactie met andere variabelen. Deze bevinding onderstreept het belang van een interactionistische benadering van de relatie tussen feedback en creativiteit, innovatie, en ondernemerschap.

Op zich lijkt feedback dus onvoldoende om creatieve, innovatieve, en ondernemende uitkomsten te voorspellen. Op basis van voorgaand onderzoek en de bevindingen in dit doctoraatsproefschrift werd een voorlopig model van feedback en creativiteit, innovatie, en ondernemerschap voorgesteld (cf. Figuur 1, Hoofdstuk 5). Het basisprincipe en de belangrijkste theoretische implicatie van dit interactionistisch model is dat feedback een contextuele factor is die kan interageren met persoonlijke en andere contextuele factoren om creatieve, innovatieve, en ondernemende uitkomsten te beïnvloeden via cognitieve, motivationele, en affectieve mechanismen. Het gebruik van een interactionistische benadering impliceert verder dat er geen simpele aanbevelingen kunnen gemaakt worden naar de praktijk. Integendeel, advies over het zoeken en geven van feedback dient gekoppeld te worden aan advies over hoe de juiste randvoorwaarden kunnen worden gecreëerd die toelaten dat medewerkers voordeel halen uit feedback (cf. Praktische Implicaties, Hoofdstuk 5).

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